axialFINANCE

User manual

Ariane Software

Axial Finance: User Guide

version 7.2.1
Copyright © 2026 Ariane Software

Table of Contents

1. General Presentation 1
1. General Information 1
2. Tips before first use 2
2.1. Recommended minimum configuration 2
2.2. Screen resolution 2
2.3. Internet Connection 3
2.4. Updating price histories 3
2.5. Creating a portfolio 3
2.6. Data backup and restoration 3
2.7. Software update 3
2.8. Technical support 3
3. Installation 4
3.1. Windows 4
3.2. macOS 4
3.3. Linux 4
3.4. Registering the license code 5
4. Workspace presentation 5
4.1. General menu 5
4.2. Instruments lists 7
4.3. Workspace selection tab 9
5. Exchanges - Markets - Business Sectors 10
5.1. Exchanges 10
5.2. Exchange rates 11
5.3. Economic activity sectors 11
6. Instrument lists 11
6.1. Principles for implementing instrument lists 11
6.2. Automatic update of the reference list 12
6.3. Adding an instrument to the reference list by the user 12
6.4. Searching for an instrument by name or ISIN code 13
6.5. Creating and updating personal lists 14
6.6. Deleting an instrument from the reference list 14
6.7. Instrument details presentation 15
7. Updating "end of day" prices (or EOD) 15
7.1. Principles of end-of-day price updates 15
7.2. Downloading end-of-day prices 16
7.3. Activating automatic mode 17
7.4. Importing prices from a file 18
7.5. Configuring price formats 19
8. Updating "intraday" prices XE 20
8.1. General Information 20
8.2. Downloading intraday histories 20
8.3. Importing intraday prices from an external file 20
9. Miscellaneous functions 20
9.1. Subscription management 20
9.2. Customizing the list of economic business sectors 21
9.3. Stock Split 22
9.4. User data Backup and Restoration 22
9.5. Choosing the screen "Look & Feel" 23
9.6. Exporting prices to a file 23
2. Market Monitoring 25

1. General Information 25
1.1. Introduction 25
1.2. Multi-window Graphical Presentation 25
1.3. Window Positioning and Sizing 27
1.4. Detaching Windows from the Market Monitoring Area 27
1.5. Linking Between Chart Windows 27
1.6. Workspace Management 28
2. Chart Window 29
2.1. Description of a Chart Window 29
2.2. Selecting an Instrument in a Chart Window 31
2.3. Displaying Technical Indicators 32
2.4. Choosing the Chart Drawing Style 34
2.5. Vertical Scale of the Main Chart 35
2.6. How the Time Cursor Works 35
2.7. X,Y Cursor and Price Label 36
2.8. Exporting a Chart Image 36
3. Graphical Tools 37
3.1. General Information 37
3.2. Multi-layer Drawing Mode 37
3.3. Drawing Horizontal, Vertical, Oblique, or Parallel Lines 38
3.4. Drawing Line Segments, Arrows, Rectangles, Triangles, Circles, or Ellipses 38
3.5. Writing Text 39
3.6. Drawing Fibonacci, Gann Figures, or Speed Lines 40
3.7. Drawing Andrews' Forks 40
4. Technical Indicators 40
4.1. General Information 40
5. Synthetic Indicator 41
5.1. General Information 41
5.2. Implementation 41
5.3. Example of a Synthetic Indicator Based on the RSI 42
3. Real-Time XE 43
1. General Information 43
1.1. Introduction 43
1.2. Opening the Real-Time Feed 43
1.3. Data Transmitted in the Real-Time Feed 43
2. Price Charts 44
3. Price Tables 45
3.1. General Information 45
3.2. Presentation of the Price Table 46
3.3. Management of personal instrument lists 47
3.4. Column Configuration 48
3.5. Sorting rows in the price table 48
3.6. Display of the Notepad 48
3.7. Monitoring Volume Evolution 49
3.8. Alerts on Significant Volumes 49
4. Order Books 51
4.1. General Information 51
4.2. Tabular Display 51
4.3. Histogram Display 51
5. Transaction List 52
6. Real-Time Rankings 53
7. Real-Time Screeners 54

7.1. General Information 54
7.2. Screener Configuration 55
7.3. Display of Screening Results 55
8. TickFlow XM 56
9. Real-Time Alerts 57
9.1. General Information 57
9.2. Programming Alerts 57
9.3. Alert Notification 58
9.4. Centralized Alert Table 61
10. DDE Export of Real-Time Feed Data 61
10.1. Creating an Excel sheet for exporting price table data 61
10.2. Reopening an existing Excel sheet 62
10.3. Exporting Order Book data to Excel 63
10.4. Data codes available for export from the feed 63
4. Trading Tools 65
1. Introduction 65
2. General Information 65
2.1. Market Screening 65
2.2. Creating a Screening Table 65
2.3. Performing a Screening Operation 66
2.4. Creating a personal list with the screening result 67
3. Signals and Rules 68
3.1. Predefined Signals in the Library 68
3.2. Creating and editing screening rules 71
3.3. Applying a rule to a price chart 73
4. Strategy Tracking XE 74
4.1. General Information 74
4.2. Defining tracking conditions 74
4.3. Searching for opening signals 74
4.4. Tracking open positions 75
5. Resistance and Support 76
5.1. General Information 76
5.2. Updating Resistance and Support Levels 76
5.3. Level Indicators XE 78
5.4. Use in a rule or a strategy XE 78
6. Day By Day Analyses 78
6.1. General Information 78
6.2. Display in price charts 79
6.3. Display in a global table 79
7. End Of Day Alerts 81
7.1. General Information 81
7.2. Presentation of the Alerts Table 81
7.3. Alerts on Horizontal Resistance and Support 82
7.4. Alerts on Graphic Objects 82
7.5. Alerts for a Signal 83
7.6. Alerts for a Rule 83
7.7. Indicator 83
7.8. Notepad 84
8. Real-Time Alerts 84
9. Instrument Rankings 84
9.1. General Information 84

9.2. Presentation of the Rankings Screen 85
9.3. Selection of Ranking Calculation Parameters 85
5. Portfolio Management 86
1. General Information 86
1.1. Introduction 86
1.2. Portfolio Reference Currency 86
1.3. Description of the Portfolio Management Screen 87
1.4. Creation and cancellation of a portfolio 87
1.5. Exchange rate for orders in foreign currency 88
2. Portfolio 88
2.1. Portfolio operations menu 88
2.2. Table of open positions 89
2.3. Summary of portfolio status 89
2.4. Detail of a portfolio position 89
2.5. Entering and modifying target, resistance, support, and stop levels 91
2.6. Using the notepad 91
3. Cash and SRD purchase orders 91
3.1. General Information 91
3.2. Portfolio status before and after the order 92
3.3. Specifics of an SRD Purchase - Estimating leverage effect 93
3.4. Cancellation of a Purchase Order 93
4. Cash and SRD sale orders 94
4.1. General Information 94
4.2. Cash or SRD sale 94
4.3. Cancellation of a sale order 95
5. Short selling orders 95
5.1. General Information 95
5.2. Short selling 95
6. Order fees 96
7. Exchange rate 97
8. Miscellaneous operations 97
8.1. Cash operations 97
8.2. Receipt of dividends or coupons 98
8.3. Distribution of free shares 98
8.4. Recording miscellaneous fees at the portfolio level 98
9. End-of-month settlement for SRD 98
9.1. Settlement of an SRD purchase 98
9.2. Liquidation of a short sale 100
9.3. Settlement status 101
10. Transaction journal 102
10.1. General Information 102
10.2. Order selection 103
10.3. Cancellation of an order or a position 104
10.4. Modification of fees and dividends 104
10.5. Exporting the transaction journal to an Excel file 104
10.6. Printing the transaction journal 104
11. Allocation of open positions 105
11.1. General Information 105
11.2. Allocation examples 105
12. Portfolio performance 107
12.1. General Information 107
12.2. Performance graph 107

12.3. Comparison of performance to a market index 108
13. Fee setup 108
13.1. Brokerage fees 108
13.2. Exchange tax 109
6. Fundamental Analysis 111
1. General Information 111
1.1. Introduction 111
1.2. Current Fiscal Year and Fiscal Year 111
1.3. Using the Notepad 112
2. Company Accounts 112
2.1. Description of the company financial data screen 112
2.2. Year-by-year account presentation 113
2.3. Sectors of activity 113
2.4. Price target and potential variation 113
2.5. Recommendation 114
2.6. Average Sector P/E 114
2.7. Beta factor 114
2.8. Company Discount 114
2.9. Net Debt 114
2.10. Net asset per share 115
2.11. Enterprise Value / Revenue 115
3. Ratios Chart 115
3.1. General Information 115
3.2. Description of the ratios chart 115
3.3. Chart Types 116
3.4. Nature of calculated ratios 118
3.5. Chart Scales 118
3.6. Additional information available on charts 119
4. Financial Ratios Table 119
4.1. Description 119
4.2. Sorting and ranking according to ratio values 120
7. Trading Systems XE 121
1. General Information 121
1.1. Introduction 121
1.2. Definition of important terms 121
1.3. Implementation 122
2. Creating strategies 122
2.1. Generalities 122
2.2. Creation 122
2.3. Creation of position opening and closing rules 123
2.4. Defining execution conditions 125
2.5. Definition of stop conditions 126
2.6. Defining Modalities 127
2.7. Importing and exporting strategies 128
3. Programming indicators 129
3.1. Generalities 129
3.2. Library of available indicators 129
3.3. Programming a personal indicator 133
3.4. Graphical representation of a personal indicator 135
3.5. Mathematical Functions 136
3.6. Importing and exporting personal indicators 136
4. Programming signals 137

4.1. Generalities 137
4.2. Library of signals 137
4.3. Programming a personal signal 137
4.4. Applying a signal to a price chart 139
4.5. Mathematical functions 139
4.6. Importing and exporting personal signals 139
5. Strategy applied to a price chart 140
5.1. Generalities 140
5.2. Customizing backtest result display in the chart 140
5.3. Commanding backtesting 141
5.4. Equity curve in the main chart 142
5.5. Equity curve and drawdown in a secondary chart 144
6. Analysis of strategy results 144
6.1. Generalities 144
6.2. General report of strategy trials 144
6.3. Detailed report of a strategy trial 145
6.4. General tables for all strategy trials 149
7. Comparison of strategies 151
7.1. Generalities 151
7.2. Customizing strategy result display in the chart 151
7.3. Choice of comparison conditions and launching the trial 152
7.4. Defining the variability of rule parameters 152
7.5. Presentation of comparison in a chart 153
8. Order Placement XE 155
1. General Information 155
1.1. Introduction 155
1.2. Choosing a Broker 155
1.3. Trading Portfolio 155
1.4. Open Positions 156
1.5. Prepared Orders 156
1.6. Orders Pending Execution 157
1.7. Order Color Codes 157
1.8. Executed Orders 158
1.9. Broker Simulation Feature 158
2. Orders from a Chart 158
2.1. General Information 158
2.2. Chart Window Trading Zone 158
2.3. Preparing an Order 159
2.4. Display of the Order and Open Position in the Chart 159
3. Orders from an Order Book 160
3.1. General Information 160
3.2. Order Book Trading Zone 160
3.3. Preparing an Order and Transmission to the Broker 161
4. Orders from a real-time executed strategy XM 162
4.1. General Information 162
4.2. Defining Real-Time Strategy Execution 162
4.3. Real-Time Execution 162

Chapter 1. General Presentation

1. General Information

Axial Finance is a stock market software that offers a global solution for:

- receiving stock market prices via the Internet:
  - "end of day" prices available after market close,
  - real-time prices in a data stream (i.e., stock transactions with the order book),
- performing Technical and Graphical Analysis studies based on "end of day" and "intraday" stock prices,
- issuing alerts during real-time operation. These alerts are defined by the user and can take into account all characteristics of price evolution,
- searching market by market for instruments that satisfy user-defined decision rules,
- defining buy-sell strategies based on user-programmed rules and verifying their results on historical stock prices,
- implementing Trading Systems and analyzing their results on "end of day" and "intraday" prices"
- implementing various trading decision support tools,
- managing any number of stock portfolios,
- performing Fundamental Analysis of listed companies and comparing their financial ratios,
- placing stock orders with brokers with whom a partnership has been established.

Axial Finance is the result of all the latest IT and Internet technologies. The program is entirely developed in Java and contains a relational database.

These technologies provide the program with great flexibility, user-friendliness, and simplicity in the Human-Machine interface, speed in executing complex operations, and allow for keeping a large amount of information in memory.

Axial Finance is designed to process instruments from different global exchanges, each in its respective currency.

With its various versions, ***Axial Finance*** covers the needs of individual investors (beginners or experienced), traders, investment clubs, asset managers, and professional investors.

Its use is intuitive and extremely user-friendly thanks to a particularly well-studied ergonomics.

Axial Finance is organized modularly to perform the following main functions:

- **Technical and Graphical Analysis** of stock prices based on "end of day" prices and real-time "intraday" prices received.
- **Trading decision support** for short and medium terms, including detection of instrument trends and detection of buy and sell signals.
- **Real-time trading** on stocks, Futures, Forex, ...
- Programming of **Trading Systems** and analysis of results on "end of day" and "intraday" prices.
- **Portfolio Management**
- **Fundamental Analysis** of listed companies and comparison of their financial performance.

Important

This manual applies to the three versions of the range: ***Axial Finance Premier***, ***Axial Finance Expert***, and ***Axial Finance Maestro***.

The chapters or paragraphs of this manual are identified by the icon:

- XE when they apply only to the ***Axial Finance Expert*** and ***Axial Finance Maestro*** versions.
- XM when they apply only to the ***Axial Finance Maestro*** version.

Warning

By providing this software, the company ***Ariane Software*** solely aims to provide users with a high-performance tool for analyzing instruments, storing market and financial information, as well as providing reflection and decision support for performing subsequent transactions.

Each user retains full responsibility for the decisions they may be required to make following the use of this software.

Neither ***Ariane Software***, nor its directors, officers, employees, members, agents, or consultants shall be held liable to any person for any losses, damages, costs, or expenses whatsoever (including loss of profit, loss of use, direct, indirect, incidental, or consequential damages) resulting from inaccuracies, errors, omissions, or alterations in the results obtained through the use of this software.

2. Tips before first use

2.1. Recommended minimum configuration

- Intel Core processor or equivalent at 2 GHz or higher
- Operating systems:
  - Windows (10 or higher)
  - macOS (10.14 "Mojave" or higher)
  - Linux
- RAM of 4 GB or more
- Available free disk space of 500 MB
- High-speed Internet connection

2.2. Screen resolution

Axial Finance is designed to support the main existing screen resolutions. A minimum resolution of 1650x1080 is necessary to use the application comfortably. A higher resolution will improve the presentation quality of the charts.

2.3. Internet Connection

> **Important**
>
> During the execution of the ***Axial Finance*** program, it is required to connect to the Internet. Therefore, the computer installation must allow the various necessary connections.

1. In cases where the computer is behind a firewall, **proxy**, **router**, or **corporate network** or via a **Wifi connection**, it is necessary that certain TCP ports remain open:
   - **ports 80 and 443** for downloading "end of day" prices
   - **ports 8080, 5672 and 2189 to 2196** to receive the *real-time stream* in "streaming" mode.
2. In cases where the computer is equipped with an antivirus system, it is necessary that this antivirus allows connections to pass through without modifying their content to the following sites:
   - **update.ariane-software.com** to receive software updates
   - **data.ariane-software.com** to download the market instruments repository
   - **quotefeed.abcbourse.com** to download "end of day" prices
   - ***.esignal.com** to receive the real-time stream

2.4. Updating price histories

Axial Finance is provided with the "end of day" price histories for Euronext Paris stocks and indices for the last 20 years known at the date of creation of the installation file. These histories must be completed by the user via downloading or importing files.

For other exchanges, the user must download or import these histories into the software.

Consult the manual in paragraphs Updating end of day prices or Updating intraday prices.

2.5. Creating a portfolio

The software is provided with a demonstration portfolio. Follow the procedure described in paragraph Creating, Cancelling a portfolio to delete it and create one or more portfolios.

2.6. Data backup and restoration

Familiarize yourself with the use of these procedures in paragraph User data Backup and Restoration.

2.7. Software update

At each launch, ***Axial Finance*** checks for the availability of a new version of the application and installs it automatically (Note: therefore, an Internet connection must be open at application launch). An update window indicates improvements, modifications, or corrections brought to the application.

2.8. Technical support

In case that the use of the software reveals certain difficulties, the website **www.axialfinance.com** is at your disposal to receive your questions at the following address:

https://www.axialfinance.com/support.jsp.

Fill out the form in detail and click on the **Send** button. The ***Ariane Software*** team will provide an answer as soon as possible.

3. Installation

3.1. Windows

1. Download the file `axialfinance-expert-7.2.1.exe` and execute it to start the installation procedure.
2. To launch the application, click on the icon placed on the desktop during installation or go through the ***Windows*** menu.

3.2. macOS

1. Download the file `Axial Finance 7.2.1.zip`; the application decompresses automatically in the Downloads folder (otherwise click on the icon to decompress it).
2. Drag the ***Axial Finance*** icon into the ***Applications*** folder.
3. Click on the ***Axial Finance*** icon; an instrument message indicates that the launch was blocked (this message appears during the first launch only).
4. Open ***System Preferences***, then in the ***Security & Privacy*** section, click on the **Open Anyway** button to authorize the application opening.

3.3. Linux

The installation mode under Linux varies depending on the distribution used:

3.3.1. Ubuntu, Mint, Debian and derived distributions

1. Click on the `.deb` file to launch the installation.
2. Click on the ***Axial Finance*** icon in the ***Office*** menu to start the program.

3.3.2. SUSE, RedHat/Fedora, Mandriva and distributions using RPM

1. Click on the `.rpm` file to launch the installation. If the installation does not start, switch to manual mode by typing the following instruction in the command line:

   ```
   rpm -Uvh axialfinance-expert-@project.version.#expert@-1.noarch.rpm
   ```
2. Verify that the correct Java version is installed by typing in the command line:

   ```
   java -version
   ```

   Axial Finance is certified to work with OpenJDK 8 and Oracle Java 8. If none of these versions are integrated into your Linux distribution, it must be downloaded and installed separately.
3. Click on the ***Axial Finance*** icon in the ***Office*** menu to start the program.

3.3.3. Other distributions

1. Copy the file with the `.tar.bz2` extension into an installation directory of your choice.
2. Decompress the archive from the command line by typing:

   ```
   tar -jxf axialfinance-expert-7.2.1.tar.bz2
   ```
3. Verify that the correct Java version is installed by typing in the command line:

```
java -version
```

Axial Finance is certified to work with OpenJDK 8 and Oracle Java 8. If none of these versions are integrated into your Linux distribution, it must be downloaded and installed separately.

4. To launch the application, click on the `axialfinance.sh` script located in the installation directory.

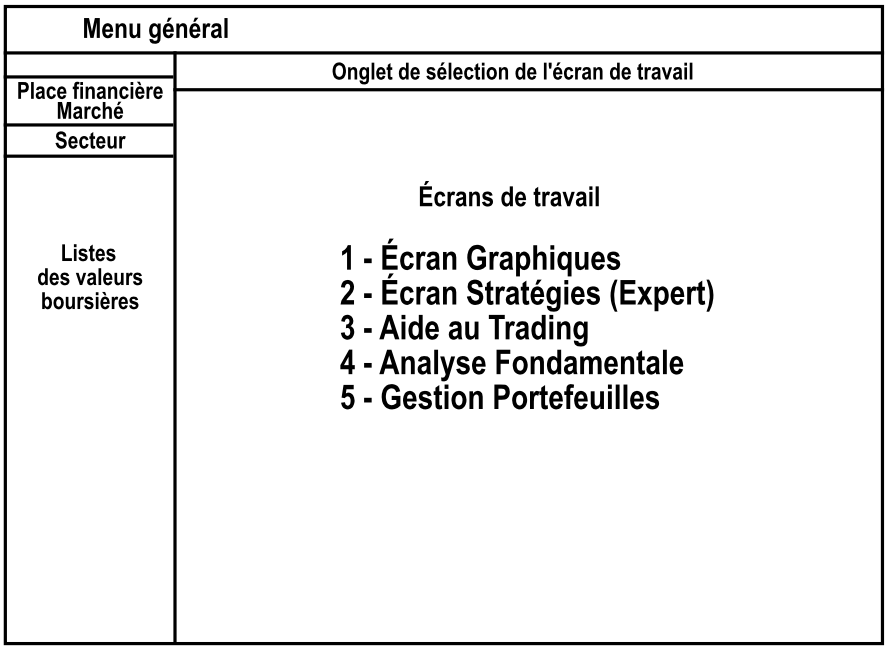
3.4. Registering the license code

At the first launch of the program, ***Axial Finance*** asks you to enter the username and the software license code. Use the 16-character license code received after purchasing the software. Without this code, it will not be possible to use the program.

4. Workspace presentation

The workspace in ***Axial Finance*** is organized around a number of screens allowing simple and direct access to the different functions of the software.

This workspace, schematized below, consists of the following parts:



4.1. General menu

The general menu contains six main options:

The ***Workspace*** menu to choose between:

Save	to re-save the opened workspace or save this workspace under a name to be entered
Rename	to rename an existing workspace.
Delete	to delete an existing workspace.
Import	to open the restoration window in ***Axial Finance*** for information stored on the computer's hard drive or an external device:

	workspaces, supports/resistances, portfolios, financial data, and *personal lists* of instruments.
Export	to open the backup window on the computer's hard drive or an external device for the user's personal data: workspaces, supports/resistances, portfolios, financial data, and *personal lists* of instruments.
New window	to open a new window of the type to be specified according to the version: Chart, Price Table, Screener, Rankings, Order Book, Transaction List, TickFlow.
(List of saved workspaces)	to open one of the saved workspaces.
Quit	to close the ***Axial Finance*** program.

The ***Instruments*** menu to choose between:

Manage personal lists	to create and update *personal lists* of instruments from the *reference list*, lists that can contain instruments from different exchanges.
Euronext index weighting XE	to consult the weighting of instruments in the main Euronext indices and calculate the variation in index points resulting from the variation in an instrument's price.
Add an instrument to the reference list	to allow the user to add other instruments to the *Reference List* in addition to those provided with the software, which are automatically updated at each launch.
Instrument details	to display the characteristics of the instrument.
Stock split	to perform a nominal division (or split) of the selected instrument.
Exchange rates	to display current exchange rates for the currencies of the main exchanges.

The ***Prices*** menu to choose between:

Download end of day prices	to perform the download of "end of day" prices.
Configure automatic download	to program the Automatic mode for downloading "end of day" prices.
Download intraday prices XE	to download historical intraday prices for the last 12 months.
Import prices from a file	to update stock prices from prices contained in an external file (Note: alternative to the download and update procedures in the general menu ***Instruments***).
Export prices to file	to create an external file with the prices of an instrument stored in the software.
Price editing	to inspect and manually modify the prices of an instrument.

The ***Trading System*** menu to choose between:

Indicators XE	to open the programming window for personal indicators.
Signals XE	to open the signals programming window.
Screening rules	to open the programming window for rules used in *Market Screening* within the ***Trading Tools*** screen.
Strategies	to open the trading strategies programming window.

The ***Preferences*** menu to choose between:

Instruments list	to define the display mode for the *instruments list*: 1. ***Hide list***: to not display this list.

2. ***Display list fixed***: to display the list permanently on the left of the screen.
3. ***Display list floating***: to display the list at a position chosen by the user.
4. ***Single-click mode***: for, by clicking once on an instrument in the list, displaying it in a price chart.
5. ***Double-click mode***: for, by double-clicking on an instrument in the list, displaying it in a price chart.

Data synchronization	to configure user data synchronization with the Ariane Software server.
Startup workspace	to, upon opening the software, find the workspace as it was at the close of the previous session or to open the last selected and saved workspace.
Broker selection XE	to choose the broker to which stock orders will be transmitted.
Default chart preferences and style	to, upon opening a new *chart window*, define the chart characteristics (dimension, scales, ...), the present technical indicators as well as the chart drawing style.
Character size	to increase or decrease the character size used in the application.
Audio alerts	to configure sounds emitted during alert detection.
Business sectors	to open the dialog window for updating economic business sectors.
Brokerage fees	to open the dialog window allowing the definition of brokerage fee calculation modes for orders entered in portfolios.
Strategy charts XE	to define the information to be included in the charts resulting from the application of strategies (Equity curves).
Manage subscriptions	to review active or expired subscriptions, as well as to enter the identifier and password for receiving the *real-time stream*.
Look & Feel	to choose the interface skin style of the application.
Language	to change the language of the application (after restart).

The ***Help*** menu to choose between:

User manual	to consult the user manual on screen.
Technical indicators	to consult the descriptive sheets of technical indicators on screen.
Programming manual XE	to consult the *JavaScript* programming manual for technical indicators and signals on screen.
Report a problem	to notify technical support of a functional problem.
About	to read the software license terms.

4.2. Instruments lists

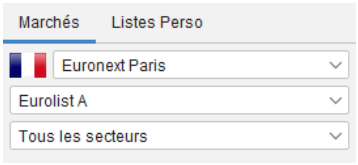
Axial Finance displays financial instruments from different exchanges contained in its database in a global or partial list depending on the need. This list can remain permanently on the left of the screen, be hidden, or be presented in a floating window. In the general menu ***Preferences*** the option ***Instruments list*** allows choosing the display mode.

At the top of the list, a tab box provides the following choices:

- The ***Markets*** tab to display all instruments in the *reference list* of the selected exchange. The global list can then be filtered by market segment, index, and economic business sector.

- The ***Personal Lists*** tab to display the *personal lists* created by the user.

4.2.1. Markets Tab

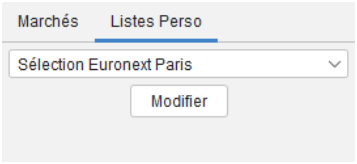


This tab contains 3 dropdown lists to define and filter the content of the list shown below:

1. Choice of exchange
2. Choice of all instruments, instruments from a market segment or an index of the selected exchange
3. Choice of an economic business sector or all sectors

The displayed list contains all instruments from the software's *reference list* with eventually instruments added by the user.

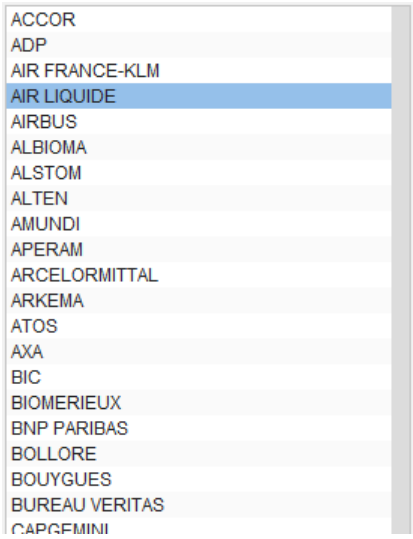
4.2.2. Personal Lists Tab



This tab contains the dropdown list allowing the display of instruments from a *personal list* created by the user. The **Modify** button triggers the opening of the dialog window to add/remove a *personal list* and modify its content.

The user can create as many *personal lists* as they wish, each with any number of instruments from various exchanges.

4.2.3. Using instruments lists



These lists allow for the selection of instruments that will be displayed in the various workspace screens.

For the Technical Analysis *chart windows*, several selection modes are available and programmable by opening the ***Chart settings*** option in the general menu ***Preferences***:

- selection with a single click in the list
- selection with a double click in the list
- assigning the instrument to the selected *chart window*
- assigning the instrument to all open *chart windows*

By right-clicking on this list, a context menu appears to allow for the choice of a function regarding the selected instrument. Some of these functions can also be triggered from the general menu.

Context menu items:

View Instrument details to display the characteristics of the selected instrument.

Add to a personal list to add this instrument to a *personal list* without having to open the dialog window by clicking the **Modify** button from the ***Perso*** tab.

Move to a personal list	to transfer this instrument from the *personal list* to another *personal list* (This option is available when a *personal list* is selected).
Delete (X) from the list	to delete the selected instrument from the reference list or from a personal list. This option is only available in the following two cases: the instrument was entered manually by the user into the *reference list* or the context menu is open at the ***Perso*** tab and a *personal list* is selected.
Buy at market	to open the dialog window allowing for placing a market buy order for the selected instrument.
Buy via SRD	to open the dialog window allowing for placing an SRD buy order for the selected instrument.
Sell short	to open the dialog window allowing for placing a short sell order for the selected instrument.
Split nominal	to perform a nominal division of the selected instrument: updating the price history and, if applicable, portfolio positions.
Help	to consult the *Instruments list* paragraph of the user manual on screen.

> **Note**
>
> It is not possible to delete instruments from the *reference list* that are managed by ***Ariane Software*** and automatically updated in the software.

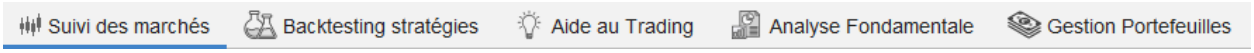
4.2.4. Searching for an instrument

Below the "Market" and "Personal List" tabs, a search field allows you to enter the name or ISIN code of an instrument searched for among the exchanges.

This function is detailed in paragraph Searching for an instrument.

4.3. Workspace selection tab

At the top and center of the screen, a tab box allows direct access to the five main functional parts of ***Axial Finance***.



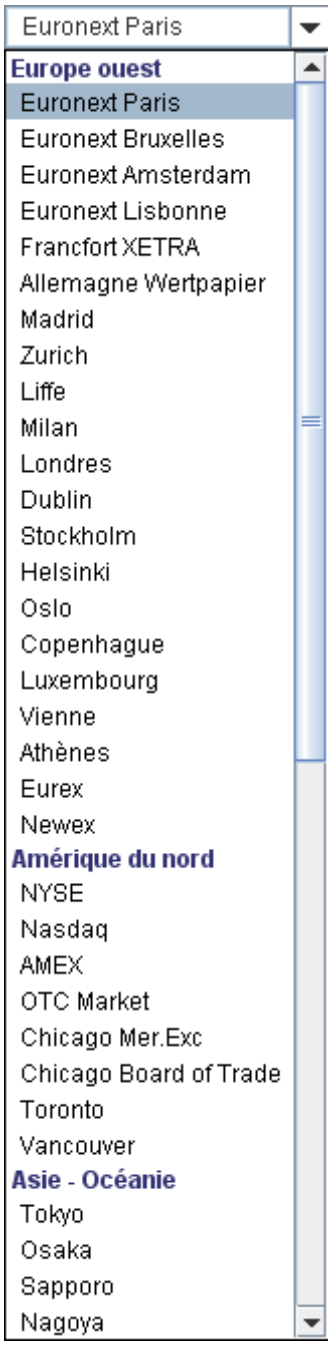
Market monitoring	for opening *chart windows* and performing technical and graphical analysis operations on "end of day" prices, "intraday" prices and receiving the *real-time feed*.
Strategies Screen XE	for applying buy-sell strategies on price history and analyzing results.
Trading Tools	for implementing "screening" of instruments by market as well as other trading help tools.
Fundamental Analysis	to analyze listed companies and compare their financial performance.
Portfolio Management	to record and track instruments in portfolios.

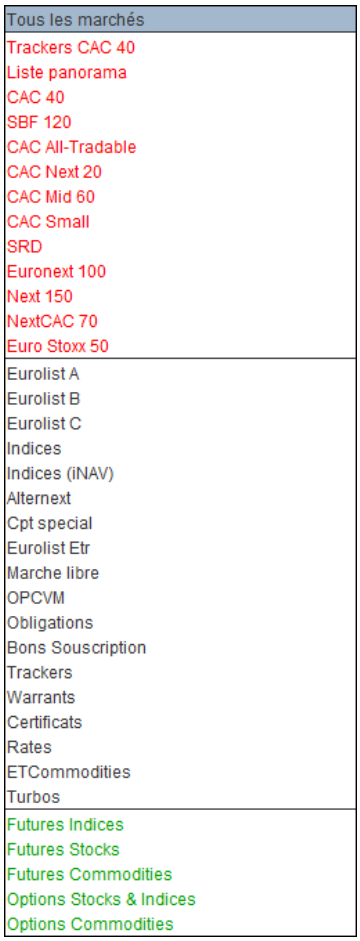
> **Important**
>
> Upon closing the program, ***Axial Finance*** remembers the workspace present in the ***Market monitoring*** area, a workspace that will be automatically re-displayed as is upon the next software

startup if this option is chosen in the general ***Preferences*** menu. In the event that the ***Last selected workspace*** option was chosen, the restored workspace will therefore be the last selected workspace but without any subsequent changes made after the user's save command.

5. Exchanges - Markets - Business Sectors

5.1. Exchanges





Axial Finance allows access to instruments from practically all global exchanges.

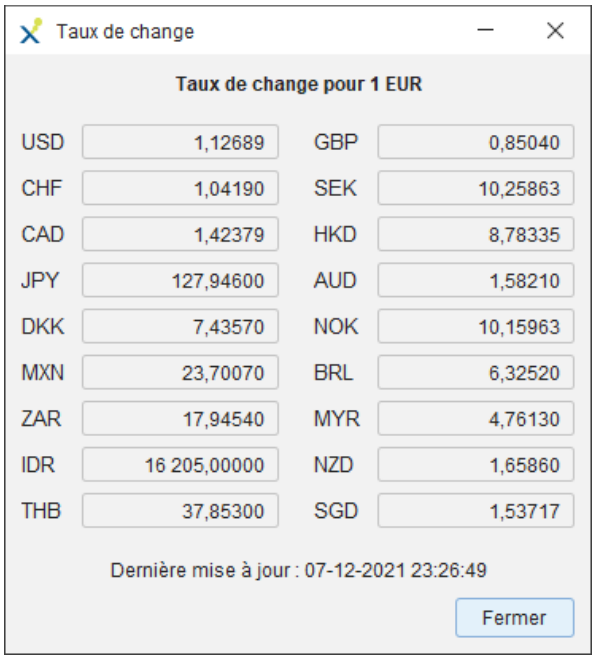
Exchanges are classified by geographical area.

Then, for each exchange, instruments can be filtered by market segment or by indices.

In the example opposite, Euronext Paris has been selected. The second drop-down list shows the possibility of displaying for this exchange:

1. Instrument from **All Markets**
2. In red, instruments of an **index**
3. In blue, instruments of a **market segment**

5.2. Exchange rates



Axial Finance is equipped with a feature that automatically updates exchange rates for the various exchanges relative to the reference currency at regular intervals.

These exchange rates are used during currency operations in ***Portfolio Management***.

To display the exchange rate window, click on ***Instruments*** in the general menu and then choose the ***Exchange rates*** option.

5.3. Economic activity sectors

The instruments listed in the *reference list* provided with the program include, in particular, their business sector according to a classification generally used by financial analysts.

The sectors thus selected by ***Axial Finance*** number about thirty.

Users can adapt this classification at their convenience by following the procedure described in the Personalizing the list of economic activity sectors paragraph.

6. Instrument lists

6.1. Principles for implementing instrument lists

Given the very large quantity of instruments listed on various global exchanges as well as the frequent changes in their composition, ***Axial Finance*** has adopted the following principles to provide maximum flexibility and adaptability to each user's needs:

1. The software's database keeps a global list known as the *reference list* in memory with all instruments from the various exchanges such as Stocks, Indices, Trackers, Futures, Currencies, Commodities, and Rates.
2. This *reference list* is **automatically updated** at each software startup by downloading from the ***Ariane Software*** server.
3. Users also have the possibility to manually add other instruments to the *reference list* (e.g., UCITS).
4. The content of the *reference list* can be displayed by exchange, market, or business sectors: see paragraph Instrument lists in the "Workspace Presentation" chapter.
5. To facilitate the use of instruments, users can compose as many *personal lists* as they wish with the instruments they want to use in Portfolio management, Technical Analysis, Fundamental Analysis, or Trading decision support operations. Each *personal list* can contain any number of instruments.

6.2. Automatic update of the reference list

On its Internet server, ***Ariane Software*** provides users of the software with the information necessary for the permanent update of the *reference list* of financial instruments from the various exchanges.

This data is regularly updated based on changes in listed companies, for example:

- Listing or delisting
- Change of market segment
- Change in index composition
- Change of name or codification

The *reference list* contains the following information for each financial instrument:

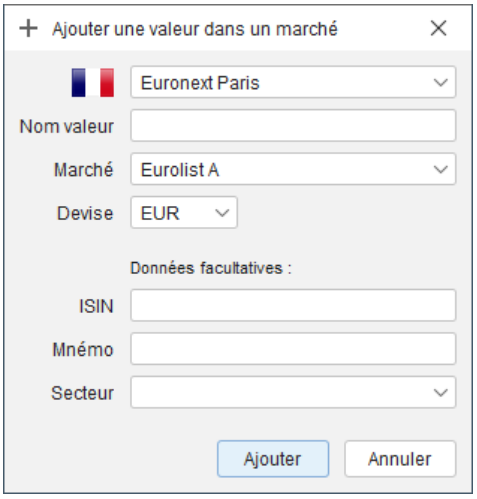
- The listing exchange
- The ***Axial Finance*** identification code
- The market segment of belonging
- Type
- Currency
- ISIN code ("International Instruments Identification Number" according to the ISO 6166 standard)
- The mnemonic code defined by the exchange
- SRD membership for Euronext Paris
- Economic activity sector
- The underlying and the expiration date in the case of Futures, Warrants, Options, etc
- Specific broker codes to which order placement is possible
- The list of indices in which the instrument is listed

6.3. Adding an instrument to the reference list by the user

This procedure is used when an instrument does not exist in the *reference list*. Such an instrument is then called a "personal instrument" and will appear in red in the reference list. The user must enter at least the following information to define the instrument:

- The exchange
- Name
- Market segment of the exchange
- Currency

The ISIN code and economic activity sector are optional and can be added later.



i. In the *instrument list*, open the ***Markets*** tab to select the exchange. Then, in the general ***Instruments*** menu, choose the ***Add an instrument*** option in the *reference list* to open the dialog box opposite.

ii. Define in the mandatory fields: the exchange, name, market segment, and currency.

iii. Optionally enter the ISIN code and economic activity sector in the other fields.

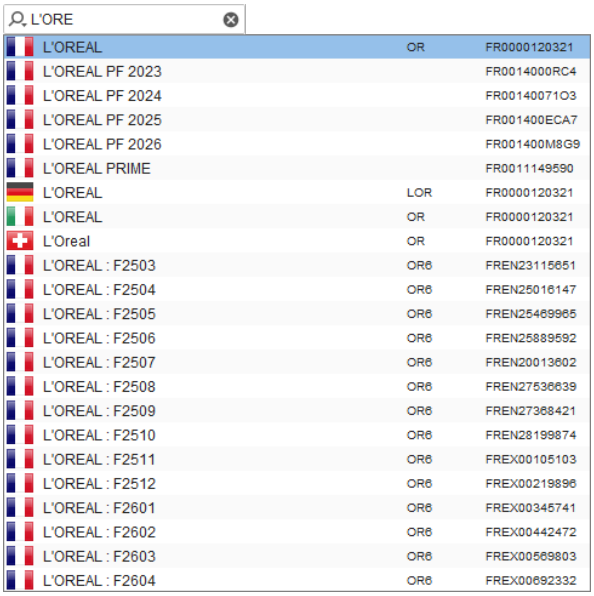
iv. Click the **Add** button to confirm entry. The window disappears and the instrument is now present in the *reference list*. At any time, to interrupt the process and return to the main screen, click the **Cancel** button.

6.4. Searching for an instrument by name or ISIN code

In the input field at the top of the reference instruments list, it is possible to enter:

- either the full name of the instrument
- or part of the name
- the ISIN code
- the mnemonic code

Axial Finance then displays the list of matching instruments:



For each instrument found, this window indicates the exchange (flag), the full name, the mnemonic code and the ISIN code.

By clicking on the line of the searched instrument, it is automatically displayed in the *reference list*.

When the search yields no results, the name entered in the search field is displayed in red.

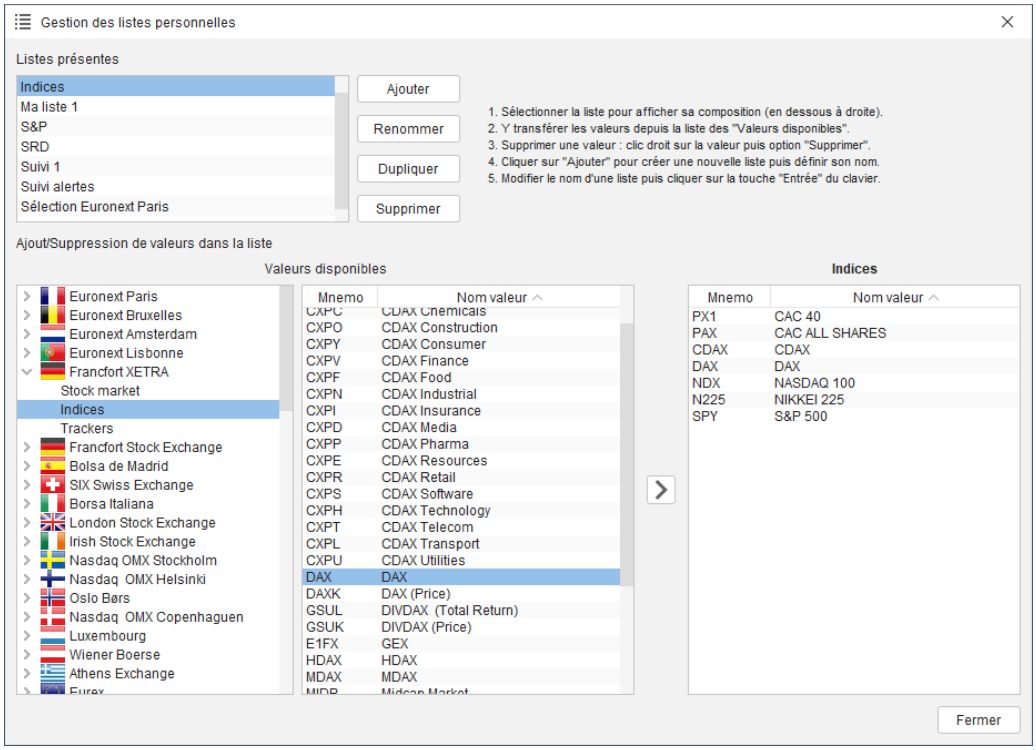
The search result is limited to the first 40 results. In this case, complete the instrument name to reduce the number of possible matches.

The search result prioritizes instruments whose name:

1. is identical to what was entered in the search field
2. starts with the characters entered in the search field
3. contains the characters entered in the search field

6.5. Creating and updating personal lists

i. Display the *instruments list* and open the ***Perso*** tab.
ii. Click on the **Modify** button to open the window below:



iii. Click on the **Add** button and then enter its name in the table.
iv. Select its name in the table of existing lists. The instruments contained in this list are then displayed below and to the right in the table named after this list.
v. Choose the exchange and the market for the instruments to be added.
vi. In the ***Available Instruments*** frame, select the instrument or instruments to add to the *personal list* and then click on the button

> **Note**
>
> To add a single instrument, simply double-click it in the table.

To delete an instrument from a *personal list*:

i. Select the instrument in the "Instruments" table of the list and press the **Delete** key on the keyboard or open the context menu and choose the ***Delete*** option.
ii. or, directly from the *reference list*, open the context menu and choose the ***Delete*** option.

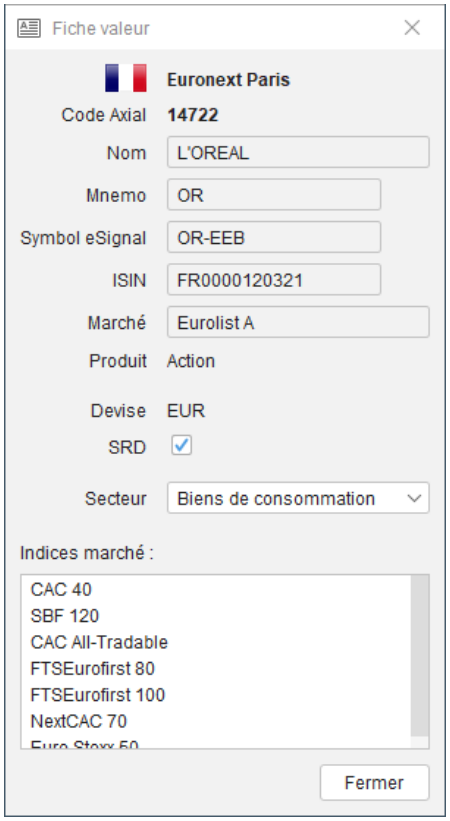
6.6. Deleting an instrument from the reference list

Only instruments defined as personal ones, added by the user, can be deleted from the *reference list*.

Select the instrument in the *reference list*, open the context menu and choose the ***Delete*** option.

6.7. Instrument details presentation

The *instrument details* page presents the information available for an instrument in the *reference list*.



Certain information can be modified by the user:

i. Select the instrument or index in the list. The procedure can then be performed in two different ways to open the dialog window shown here:
   - from the general ***Instruments*** menu and the ***Instrument details*** option,
   - or by right-clicking directly in the *reference list* to open the context menu and selecting the ***Instrument details*** option.

ii. Optionally, modify the necessary information.

iii. Click on the **Close** button to save the changes and close the window.

7. Updating "end of day" prices (or EOD)

7.1. Principles of end-of-day price updates

Axial Finance was designed to simplify this operation as much as possible by taking advantage of all available Internet resources.

Price updates can be performed in several different ways for subscribed users:

1. Automatically when displaying the instrument in a chart if the Internet connection is open. The prices of the instrument are updated from the date of the last price present in the software's database. In this case, the entire available history of the prices is not reloaded into the software.
2. By clicking on the ***Reload prices*** option in the chart ***Display*** menu. In this case, the entire available history of the instrument's prices is reloaded into the software.
3. By downloading via the Internet for subscribed users. This download mode is implemented very simply upon user request.
4. Completely automatically at software startup for subscribed users. This automatic update concerns instruments of type stocks and indices. The download takes place at program startup, as soon as the Internet connection is open and without user intervention. ***Axial Finance*** determines the necessary update period and launches the download which occurs simultaneously with other operations performed by the user.

For non-subscribed users, through importing prices from a file (text or Excel) that the user can obtain on free-access websites. This last possibility, slightly more complex to implement than the previous two, can be useful in certain particular cases for instruments such as SICAVs or FCPs whose prices are not widely distributed.

Upon the first use of ***Axial Finance***, it is advisable to update the instrument prices. The program is provided with its database loaded with the available prices at the date of creation of the installation file; downloading histories from the ***Prices*** menu then allows filling the elapsed period since that date.

Then, by activating automatic mode, prices will be updated at each program startup or the program will wait until the computer is connected to the Internet.

7.2. Downloading end-of-day prices

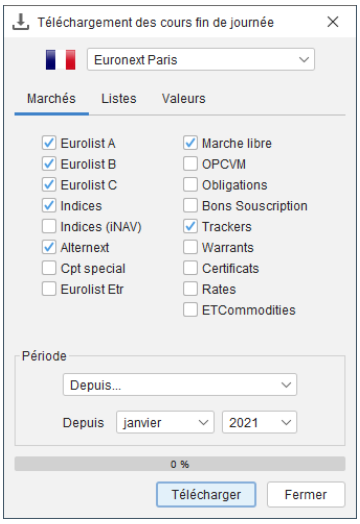
Downloading end-of-day prices requires a subscription. If automatic mode is activated, this download can also be launched at any time as long as the downloading process is not currently active.

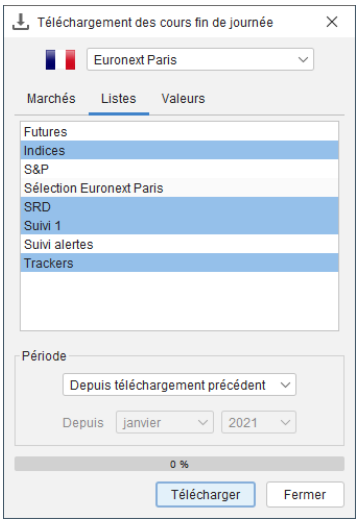
Downloading allows obtaining at once the prices for instruments:

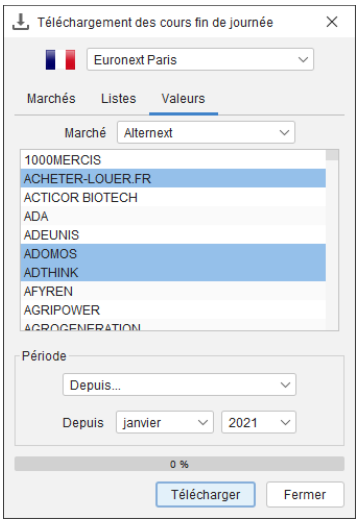
1. from one or several markets of the same exchange,
2. from one or several *personal lists*,
3. from one or several instruments of the same market segment.

To perform a download, follow this procedure:

i. In the general menu ***Instruments***, choose the option ***Download EOD price histories*** to open the dialog window below.
ii. Choose the exchange for the prices to be downloaded.
iii. According to the prices to be updated, select one of the ***Markets***, ***Lists*** or ***Instruments*** tabs:
   - The ***Markets*** tab allows choosing one or more markets of the chosen exchange.
   - The ***Lists*** tab allows choosing instruments from one or several *personal lists* (instruments that may belong to multiple exchanges).
   - The ***Instruments*** tab allows choosing one or several instruments from a market segment of the chosen exchange.
iv. Then, define according to your needs the duration of the prices to be downloaded in the ***Period*** section. This list offers the following choices: *Since previous download*, *Before last prices*, *Last week*, *Last fortnight*, *Last month*, *Last 3 months*, *Last 6 months*, *Last 12 months*, or *Since ...* a date to be specified later by the first of the month and the year.
v. Then click on the **Download** button.







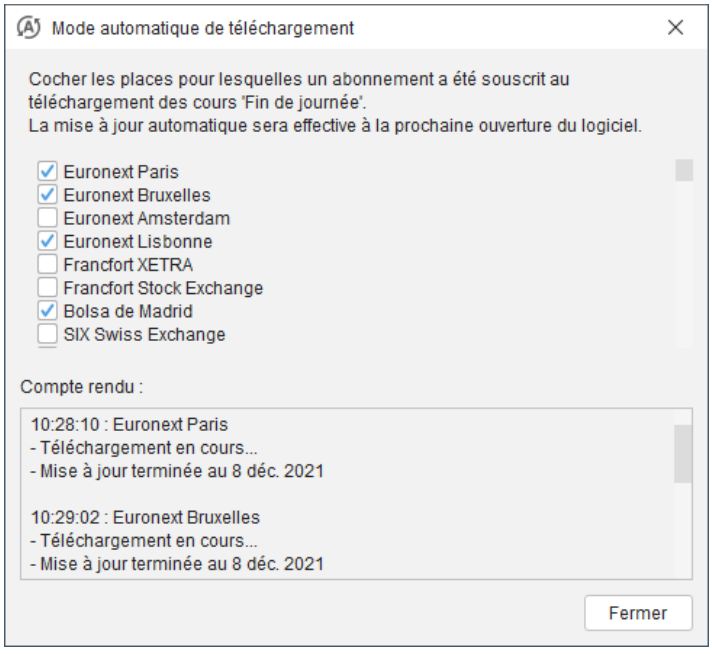
The download begins and the progress is displayed in a panel with the quantity of instruments and prices downloaded. The duration of the download varies according to the speed of the Internet line and the number of prices requested. The window closes when the download is finished.

Axial Finance remembers the choice of download parameters and records the date of the last price update. Thus, during subsequent updates, it is sufficient to remain with the *Since previous download* option.

7.3. Activating automatic mode

To activate or deactivate automatic mode:

i. In the general menu ***Prices***, choose the option ***Configure automatic download*** to open the dialog window below.



ii. Check (or uncheck) the boxes for the financial exchanges for which automatic mode is requested (not requested).

iii. Click on the **Close** button.

At the next program startup, prices will be updated automatically for the requested exchanges, while the program executes other functions commanded by the user ("background task" mode).

The window has a report area, viewable at any time, which records all operations performed.

Important

In automatic mode, ***Axial Finance*** records for each exchange the date of the last downloaded prices. This date is used as the starting point of the download period during subsequent program startups. To avoid overloading the Internet connection, the automatic download period is limited to the last 30 days relative to the current date. The report area will indicate if there were older prices. In this case, use the end-of-day price download from the ***Instruments*** menu to update the period not covered by automatic mode.

7.4. Importing prices from a file

This procedure is used when price files in text (CSV) or Excel format are available for download on the Internet.

Users with such text or Excel files can transfer them according to the following procedure into the software database after having temporarily saved them on the computer's local drive.

Important

Instruments can be referenced in three different ways of your choice:

- by specifying the exchange and the ISIN code
- or by specifying the exchange and the mnemonic code (symbol) of the exchange
- or by specifying the ***Axial Finance*** identification code. This code is indicated in the *instrument details* viewable from the *instruments list*.

In the case of referencing by exchange and ISIN or mnemonic code, the file must only contain the prices for instruments belonging to a single exchange. The exchange reference is performed in the import window; only the ISIN or mnemonic code must be present in the price file.

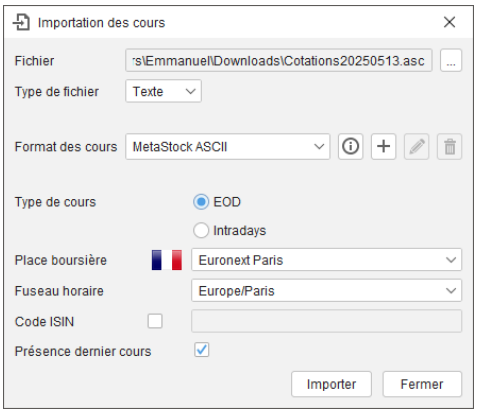
In the case of referencing by the ***Axial Finance*** identification code, the file can contain prices for instruments from several exchanges. In this case, the selection of the exchange in the import window is not used.

Axial Finance erases all prices currently in the database that fall between the dates of the first and last price for each instrument and replaces them with the imported ones.

Note

If the file only contains prices for a single instrument, the ISIN code of the instrument may not be present in the file. In this case, the ISIN code must be specified in the import window.

i. In the general menu ***Prices***, choose the option ***Import prices from a file*** to open the dialog window below.



ii. Click on the button to the right of the ***File*** field to open the file selection window for the file temporarily saved on the computer's hard drive. The path of this file is then entered in the ***File*** field.

iii. Choose the file type (Text or Excel).

iv. Choose the format of the prices in the file. ***Axial Finance*** offers a list of commonly used formats. However, the user has the possibility to define their own formats by clicking on the + button to open the creation or modification window for custom formats (see the procedure in paragraph Configuring price formats).

v. Specify whether the prices are EOD (End of Day) or intraday by checking the corresponding box.

vi. Also define the exchange for the prices in the file in the case of ISIN-based referencing.

vii. In the case of intraday prices, also specify the time zone for the times in the file.

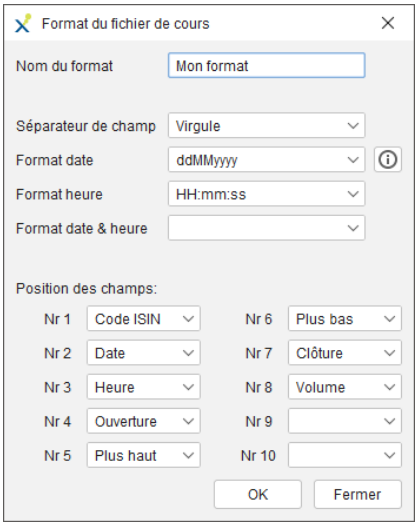
viii. If the price file contains prices for only one instrument without the ISIN or the ***Axial Finance*** identification code, the ***ISIN code*** box must be checked and the code entered in the corresponding field. ***Axial Finance*** verifies the existence of an instrument with that code in the *reference list* for the defined exchange. If the ISIN code is unknown, the import will be refused. It will then be necessary to enter this new instrument manually in the *reference list* before importing the prices.

ix. Check or uncheck the ***Presence of last price*** box depending on whether the file actually contains the latest prices for the instruments.

x. Click on the **Import** button to launch the import.

7.5. Configuring price formats

This procedure allows for defining the file type, the position of data, and the character used as a separator for this data.



i. Define the name of the created format

ii. In the case of a text file only, define the field ***Separator***

iii. Define the date format

iv. In the case of intraday prices, define the time format (if the time is in a separate field from the date) or alternatively define the "date + time" format.

v. Then, for the ***Data Field Position***, select the data type in the associated dropdown list for each position.

vi. Click on the **OK** button

8. Updating "intraday" prices

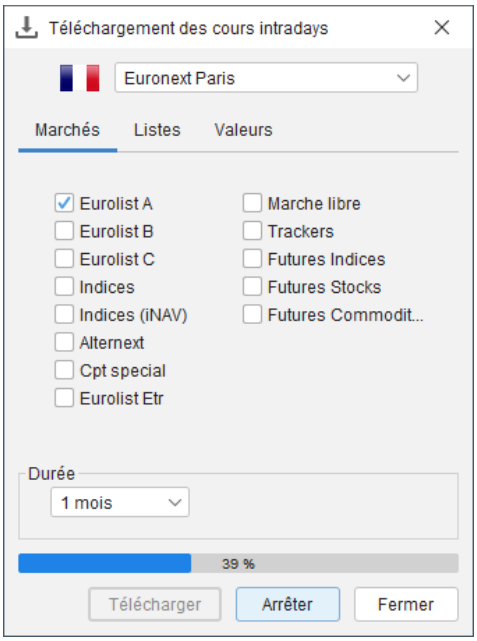
8.1. General Information

The downloading and updating of intraday prices is performed for subscriptions to the *real-time stream*.

8.2. Downloading intraday histories

Axial Finance allows downloading and storing up to 12 months of intraday prices with a 1-minute periodicity in its database.

i. In the general menu ***Instruments***, choose the option ***Download intraday histories*** to open the dialog window below.



ii. Define the instruments to be downloaded in one of the ***Markets***, ***Lists*** or ***Instruments*** tabs.

iii. In the ***Duration*** section, choose the number of days, weeks, or months to download. *1 day* corresponds to the current day if this operation is performed during market hours, or the last available trading day.

iv. Click on the **Download** button.

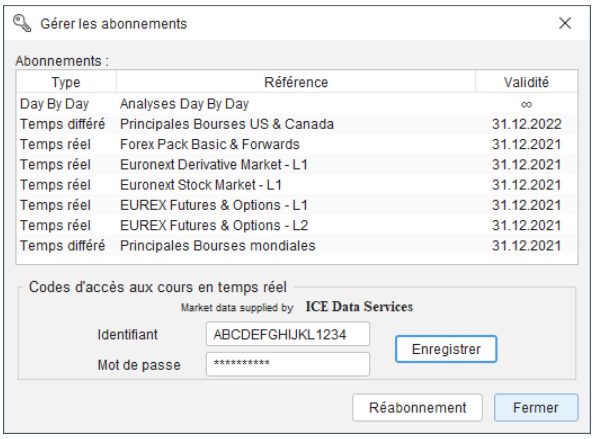
8.3. Importing intraday prices from an external file

See the procedure described in paragraph Importing prices from an external file of the End of Day Price Update section.

9. Miscellaneous functions

9.1. Subscription management

The identification codes and passwords for subscriptions made by the user are automatically recorded in the software at program launch (Internet connection open). The user can check their subscription status in the management window by choosing the ***Manage subscriptions*** option from the general ***Preferences*** menu.



For each subscribed or renewed subscription, the window indicates:

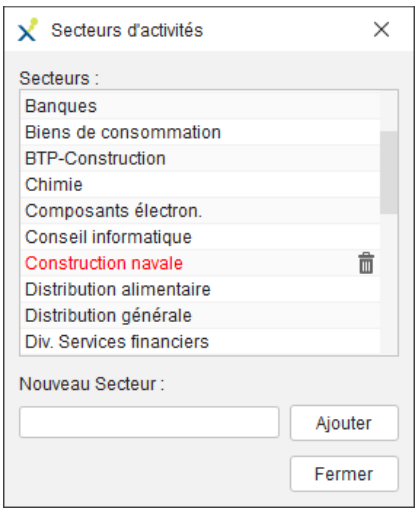
i. The type of subscription (Daily, Real-time, Delayed, Day By Day, etc.)
ii. The name of the subscription
iii. The expiration date

Unrenewed subscriptions are indicated with a red background.

> **Note**
>
> In the case of a real-time stream subscription, the user has the option to manually enter the identifier and password if needed. To do this, the codes are entered in the *Identifier* and *Password* fields and then saved by clicking the **Save** button.

9.2. Customizing the list of economic business sectors

In the *reference list*, "stock" type instruments are generally assigned to a sector. In addition to the sectors already present in the software, the user has the possibility of adding additional sectors:



i. In the general ***Preferences*** menu, choose the ***Business sectors*** option to open the dialog window shown here.
ii. Then, depending on the case:
   - To delete a sector, click on the icon next to the sector in the list. Only sectors previously entered by the user and appearing in red in the list can be deleted.
   - To add a sector, enter its name in the input field at the bottom and click the **Save** button.

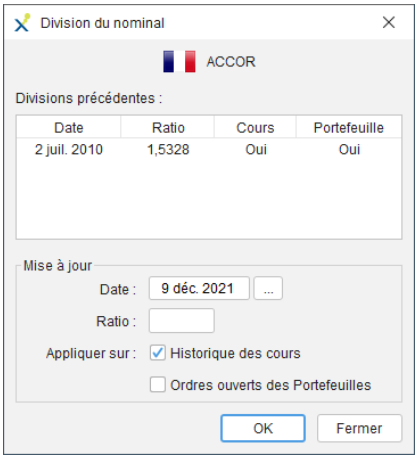
Note

When a sector is deleted, the instruments associated with it will have an empty sector field and will appear in the *personal list* only if the ***All sectors*** option is chosen. In that case, choose another sector by opening the ***Instrument details*** window.

When a new sector is added, it is necessary to proceed with assigning instruments to it by opening the ***Instrument details*** window.

9.3. Stock Split

When an instrument's nominal value changes, the historical prices in the database up to the date of the split must be modified, as well as target prices, support or resistance levels if this instrument is in a portfolio. ***Axial Finance*** easily performs these operations with the following procedure:



i. Select the instrument in the *instruments list*.
ii. In the general menu ***Instruments***, choose the option ***Stock split*** or click with the right mouse button in the *instruments list* to open its context menu and select the ***Stock split*** option to open the dialog window shown here.
iii. Choose the date from which the split must be effective.
iv. Enter the split ratio.
v. Define the type of update by checking the boxes:
   - ***Price history*** to correct prices recorded before the operation date
   - ***Portfolio positions***, to also adjust portfolio positions
vi. Then click on the **OK** button to perform the split.

Important

The ratio corresponds to the proportion between the number of shares after and before the operation. For example, multiplying by 2 the number of shares results in a ratio of 2 (which also corresponds to a division of the price by 2). In case of error, cancel the operation by repeating it with an inverse ratio (e.g., 0.5 instead of 2) at the same date.

Note

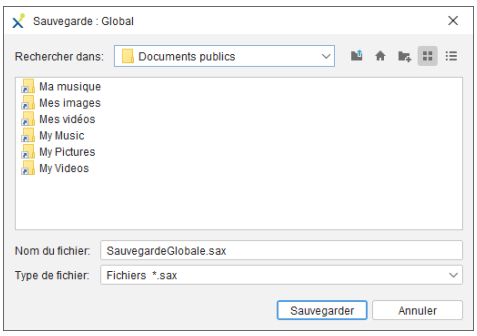
If later, the history of this instrument is downloaded again with prices without the split, it will be necessary to repeat this operation. The table above summarizes the operations already performed.

9.4. User data Backup and Restoration

Axial Finance allows for backing up essential data to the hard drive or an external device (USB key, etc) and restoring it later.

To back up data:

i. In the general menu ***Workspace***, choose the option ***Export*** and then ***Global*** or a specific ***data type***.
ii. In the dialog window, select the directory in which the file will be saved.



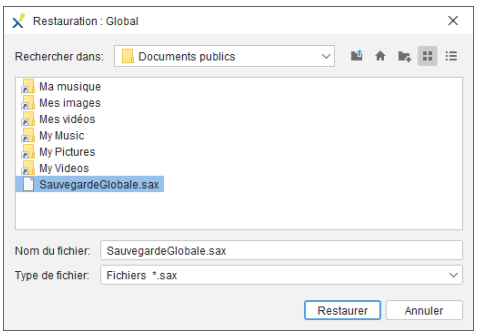
iii. Provide a name for the backup file in the provided field, then click the **Save** button.

The extension `.sax` will be automatically added to the saved file.

> **Note**
>
> Remember the name given to the saved file and the folder in which it is stored so that you can find it during restoration.

To restore data:

i. In the general menu ***Workspace***, choose the option ***Import*** and then ***Global*** or a specific ***data type***.
ii. In the dialog window, select the directory in which the file is stored and then the backup file with the extension `.sax`.



iii. Click on the **Restore** button.

9.5. Choosing the screen "Look & Feel"

The software's appearance can be modified. ***Axial Finance*** uses the Java Metal style by default. It is possible to change the interface style so that it resembles the operating system:

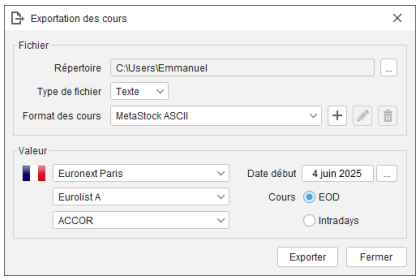
i. In the general menu ***Preferences***, choose the option ***Look & feel***.
ii. Select the box corresponding to the desired "Look & Feel".

It is recommended to relaunch the software after this operation.

9.6. Exporting prices to a file

Axial Finance allows exporting "End of Day" and "intraday" prices of an instrument present in its database. Prices can thus be stored in a text (CSV) or Excel file and then used by the user for their strictly personal use.

The price export format can be defined by the user (see the procedure for defining the format in paragraph Configuring price formats).



i. In the general menu ***Prices***, choose the option ***Export prices to a file*** to open the dialog window shown here.
ii. Define the ***Destination directory*** by clicking on the corresponding button which opens the selection window.
iii. Choose the file type (Text or Excel).
iv. Choose the format of the prices in the file.
v. Choose the instrument using the dropdown lists.
vi. Choose the date of the first price to export.
vii. Specify whether the prices are EOD or intraday by checking the corresponding box.
viii. Click on the **OK** button.

The name of the text file is defined with the ISIN code of the instrument (for example, `FR0000120404.txt` for Accor).

Chapter 2. Market Monitoring

1. General Information

1.1. Introduction

In the general menu, select the ***Market Monitoring*** tab.

The ***Market Monitoring*** module allows for the following operations, available depending on the software version:

1. Graphical and technical analysis of instruments based on their "end of day" or "intraday" prices.
2. Real-time monitoring of market evolution.
3. Real-time detection of programmed alerts.
4. Graphical analysis of the results of implemented strategies (see chapter Trading Systems).
5. Placing stock orders to a broker (see chapter Order Placement).
6. Real-time monitoring of all transactions for a list of instruments.

1.2. Multi-window Graphical Presentation

The ***Market Monitoring*** module allows you to open, simultaneously within the same workspace at a location chosen by the user and on one or more monitors connected to the computer, the following windows:

Chart Windows	Each *chart window* displays the prices of a chosen instrument (the same instrument can be present in multiple *chart windows* simultaneously).
Price Tables XE	Depending on the version, two or more XM *price tables* can be opened. Each table displays, for a list of instruments, the data transmitted in the *real-time feed*.
Screeners XE	Depending on the version, one or more XM *screeners* can be opened. Each *screener* calculates and displays in real time the instruments that meet the screening rule for the selected periodicity from a chosen list.
Rankings XE	Depending on the version, two or more XM *rankings* can be opened. Each *ranking* calculates and displays in real time the ranking of a list of instruments for a selected duration and periodicity.
Order Books XE	Each *order book* displays the best real-time offers and demands for an instrument. Two forms of order book presentation are available: tabular or histogram format.
Transaction Lists XE	Each *transaction list* displays in real time the transactions of the current session for an instruments.
TickFlow XM	The *TickFlow* window displays in real time all transactions executed on the exchange for a list of instruments.

> **Note**
>
> There is no limit to the number of *chart windows*, *order books*, and *transaction lists* that can be opened simultaneously.

Example of a workspace organization:

The ***Market Monitoring*** area includes a set of buttons in its upper part to open the different windows (this is also possible from the general menu ***Workspace***, option ***New window***), an instrument search field, and the real-time feed status button.

To add a *chart window* to the currently open *workspace*. Upon opening a new *chart window*, its configuration is that defined by default in the ***Preferences*** menu and the prices are those of the instrument selected in the *instrument list*. The configuration and the instrument may subsequently be modified.

To open a *price table*.

To open a *screener*.

To open a *ranking*.

To open an *order book* in tabular format for the instrument selected in the *instrument list*.

To open an *order book* in histogram format for the instrument selected in the *instrument list*.

To open a *transaction list* for the current session of the instrument selected in the *instrument list*.

To open the *TickFlow* window.

To open the trading portfolio.

To display the selected broker and the connection status (Red = closed, Green = open). In the event that the connection to the broker is interrupted (button turns red), click on this button to reset it.

On the far right, the *Real-time Feed* button indicates the status of the feed (green for open and red for closed) and, if necessary, allows commanding the opening and closing of the feed.

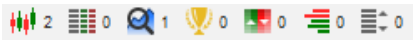
Important

To delete a window from the currently open *workspace*, two methods are possible:

1. For permanent deletion, click on the cross in the top right corner of the window and then re-save this workspace from the general menu. Without the re-saving command, the window will reappear when this workspace is recalled.
2. For temporary deletion, minimize the window to an icon by clicking on the button located in the top right corner of the window.

The central area contains the various windows open in the current *workspace*.

At the bottom, a status bar remembers the labels of the *workspace* windows that have been minimized. To the right of this status bar, a set of counters indicates the number of windows open of each type:



1.3. Window Positioning and Sizing

The dimensions of *chart windows*, *price tables*, *order books*, and *transaction lists* are adjustable by the user. By selecting a window edge with the mouse cursor, it changes into a horizontal or vertical arrow. While holding down the left mouse button, drag vertically or horizontally to obtain the desired dimension.

To move a window, press and hold the left mouse button on the top border. While holding it, move the mouse cursor to the desired location.

To facilitate precise window positioning, ***Axial Finance*** is equipped with an automatic snapping system. When a window's vertical or horizontal edge approaches an edge of the ***Market Monitoring*** area, releasing the left mouse button causes the window to snap against that edge.

For each *workspace*, the dimensions and positions of the windows are kept in memory.

1.4. Detaching Windows from the Market Monitoring Area

In the case of a hardware configuration with multiple monitors or a single very large screen, it may be useful to be able to detach windows from the area occupied by ***Market Monitoring*** to position them outside.

Axial Finance possesses a window detachment feature. Each window has a button in the top left corner: which, when clicked, allows detaching the window and subsequently reattaching it to the ***Market Monitoring*** area.

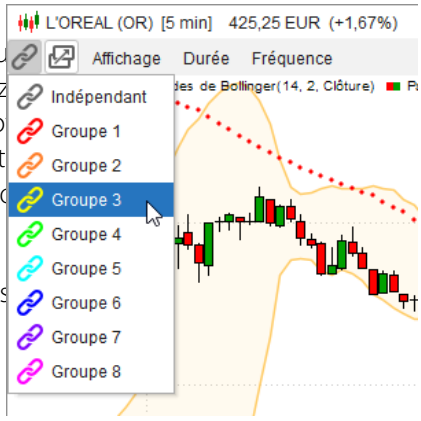
1.5. Linking Between Chart Windows

When multiple windows are open in a workspace, it is often useful to link certain ones so that they always display the same instrument with different durations or frequencies. Once the windows are linked, any change of instrument in one of them also applies to all other linked windows.

Axial Finance provides this linking capability and allows for defining multiple independent groups of linked windows.

In the upper left corner of the window, a button representing a chain opens a menu allowing you choose one of six groups. Each group is symboliz by a colored chain. All windows having a chain o the same color will be automatically linked toget It is possible to define six distinct groups of linke windows.

To remove a window from a group, select the firs option in the dropdown list.



1.6. Workspace Management

A *workspace* is defined by:

i. Its name
ii. The different windows that compose it (in positions and dimensions)
iii. The instruments or list of instruments selected in each window
iv. The composition of *chart windows*: duration and frequency of the chart prices, selected *technical indicators*

To save or re-save the currently open *workspace*, choose from the general menu ***Workspace*** the option ***Save*** and then choose:

- ***as...*** and subsequently define the name of this workspace
- or the name of the open workspace (shown in bold) to re-save it

To recall a memorized *workspace*, click on its name in the list of workspaces in the general menu ***Workspace***.

Important

When changing a *workspace*, any modifications made to the workspace that is about to be closed will not be automatically saved. To find them upon reopening this workspace, it is necessary to save them before changing workspaces.

To delete a *workspace*, choose from the general menu ***Workspace*** the option ***Delete*** and then click on its name.

Note

There is no limit to the number of *workspaces* that can be created.

2. Chart Window

2.1. Description of a Chart Window

Each *chart window* includes the following elements:

2.1.1. Chart Window Menu

Menu ***Display*** with options:

Indicators	to open the window for selecting and configuring the *technical indicators* of the chart
Price Scale	to choose the type of vertical scale for the *main chart* (linear, logarithmic)
Open order book XE	to add the *order book* transmitted by the *real-time feed* to the chart (only in the case of an intraday duration chart)
Define Resistance-Support Levels	to enter or modify the *resistance and support levels* of the instrument in the chart
Day By Day	To display the graphical analysis performed by ***Day By Day*** as well as recommendations (if a valid subscription is active).
Real-time alerts XE	to open the dialog window for adding or modifying a real-time alert on the instrument in the chart.
Real-time strategies XM	to open the dialog window for defining, activating, and disabling the execution of a *strategy* in real time and opening/closing positions in the trading portfolio.
Show trading zone XE	to make the trading zone appear at the top of the chart, where real-time data is displayed and the command for placing an order with a broker is located.

Hide chart menu	to hide/unhide the chart menu (allowing you to increase the available surface area for the chart within the *chart window*)
Hide time cursor	to hide/unhide the *time cursor* at the bottom of the chart (allowing you to increase the available surface area for the chart within the *chart window*)
Chart style	To define a specific style for this chart window and not use the general default style defined in the general menu ***Preferences*** option ***Default chart definition***.
Duplicate chart	To add a new *chart window* identical to this one into the currently open *workspace*.
Draw	to draw lines, segments, channels, ellipses, rectangles, triangles, arrows, and Andrews' forks in the chart
Enable (or disable) magnet effect	to enable (or disable) the precise positioning mode for the ends of drawings in the chart.
Text	to open the text entry dialog window for the chart
Fibonacci, Gann Tools	to select options related to drawing Fibonacci curves, Gann curves, or the Speed Line.
Clear signals	to clear from the chart any signals drawn during the application of a signal, a rule, a strategy, or the detection of real-time alerts.
Dividend adjustment XE	to enable/disable the adjustment of prices with distributed dividends.
Reload prices	to reload into the chart and save in the software's database the entirety of the available price history (if a valid subscription is active).
Notepad	to open the notepad for the instrument, allowing you to keep a free-text note (maximum 2000 characters per instrument)
Resize chart	to resize the chart directly to the dimension defined during the last export.
Export chart	to open the window for exporting the chart as an image file
Send chart by email	to send the chart image via email to one or more recipients.
Chart window help	to consult the "Chart Window" chapter of the user manual

> **Note**
>
> The options in the ***Display*** menu are also accessible via the context menu that opens when right-clicking within the chart.

Menu ***Duration*** to define the duration of prices displayed in the resting position of the *time cursor*. This duration will be automatically adjusted when using the *time cursor* (see below).

- In number of bars XE
- In number of days XE
- In number of weeks XE
- In number of months and years

Menu ***Frequency*** with options:

- tick-by-tick or n ticks XE

- In Tick Volume XE
- In Range Bar XE
- in 1 or n seconds XE
- in minutes and hours XE
- daily, weekly, or monthly

2.1.2. Function Buttons

These buttons allow direct control of the most frequently used functions:

Indicateurs To open the selection window for *technical indicators* to be displayed in the chart

To choose from the dropdown menu the number of the *layer* of the *chart window* (see the definition of the concept of *layer* in the paragraph Multi-plane Drawing Mode)

To choose from the dropdown menu the type of drawing to perform (segment, channel, arrow, horizontal, circle, etc)

To activate the *eraser* function, allowing you to erase *technical indicators* and drawings on the chart

To define and display the 6 *resistance and support levels* for the instrument in the chart

2.1.3. The Main Chart and Secondary Charts

The *main chart* displays the prices of the instrument and the *technical indicators* whose vertical scale is identical to that of the prices (for example, moving averages, Bollinger bands).

Below the *main chart*, a maximum of 4 *secondary charts* can be added to display other *technical indicators*.

2.1.4. The Time Cursor

The *time cursor* is located at the bottom of the chart window:

It allows you to move the chart horizontally along the timescale and zoom in on any time interval.

2.1.5. Buttons for Rotating Secondary Charts

The two buttons and to scroll vertically, like in a slideshow, up or down through the *technical indicators* selected in the *secondary charts* that are open.

2.2. Selecting an Instrument in a Chart Window

To display the prices of an instrument in a *chart window*, its selection is made from the *instrument list* on the left side of the screen.

Two modes of operation are available: ***Single-click Mode*** or ***Double-click Mode***. The choice of mode is made in the general menu ***Preferences***, option ***Stocks lists display mode***. The first mode is more direct but every

click will trigger a change of instrument, whereas in some cases the reason for the click might be different. This first mode has the advantage of allowing rapid scrolling through a *instrument list* by pressing the **Up** or **Down** keys on the keyboard.

When multiple *chart windows* are open, you may want to change the instrument in only one window or in several of these windows at the same time. To define a group of windows linked together, see the procedure defined in paragraph Linking Chart Windows Together.

By clicking or double-clicking (depending on the chosen mode) on an instrument from the reference list, this instrument will be assigned to the selected window and to all other windows in its linked group.

Alternatively, the **Drag and Drop** method is also available for assigning an instrument to a group of linked windows. You select the instrument in the *instrument list*, then while holding down the left mouse button, drag it over a *chart window* of the group and release the button.

Note

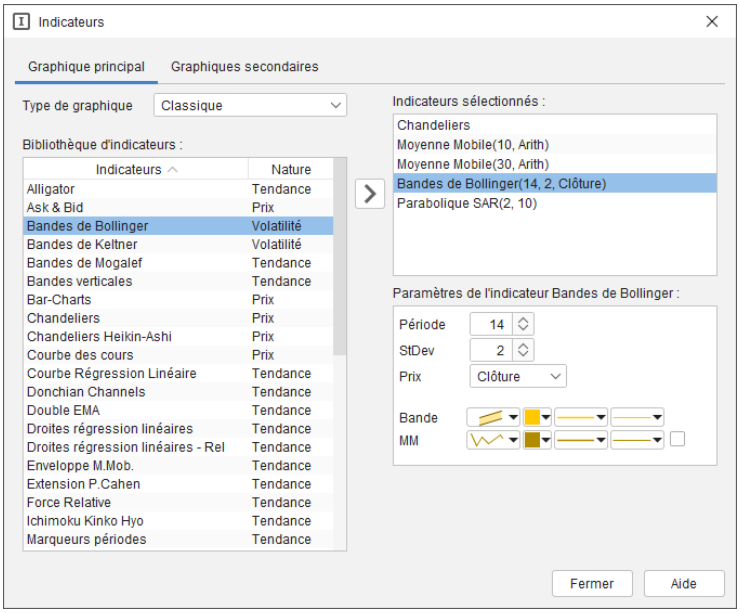
It is also possible to type the **mnemonic code** of the instrument on the keyboard to display it directly in the previously selected chart with the mouse. For example, if the exchange *Euronext Paris* is selected in the instrument list, to display L'Oréal, you simply type *OR*. If another exchange is selected, you must then add a space and the country code after the mnemonic code, such as *ALU FR*.

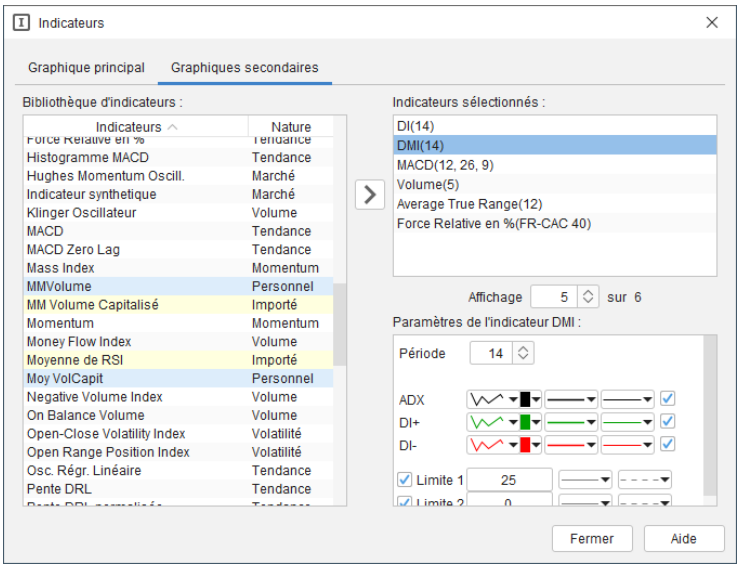
2.3. Displaying Technical Indicators

To display *technical indicators* in the chart, click on the **Indicators** button in the icon bar to open the dialog window below.

This dialog window can also be opened from the chart's context menu (right-click in the chart) or from the ***Display*** menu.

This dialog window includes two tabs for choosing the *technical indicators* for the ***main chart*** or for the ***secondary charts***.





2.3.1. Main Chart

i. In the ***Chart Type*** dropdown list, select the type of representation: Classic, Point and Figure, Kagi, Renko, or Line Break.

ii. Next, transfer the *technical indicators* from the ***Library*** on the left into the ***Selection*** frame on the right.

To transfer, double-click the *technical indicator* or select it and click the button.

The same *technical indicator* can be added to the chart multiple times.

To remove a *technical indicator*, select it in the ***Selection*** frame and click the button, or press the **Del** key on the keyboard.

iii. For each *technical indicator*, define its curve style and parameters by selecting it in the ***Selection*** frame. The available parameters are displayed directly below, along with possible styles. For each curve composing the indicator and depending on its nature, the style allows for:

i. choice of curve shape: continuous single-color line, continuous red/green bicolor line, series of bicolor dots, series of red/green bicolor dots, colored band, single-color histogram, bicolor histogram, ...

ii. choice of color

iii. choice of line thickness

iv. choice of dotted line type

> **Note**
>
> Removing a *technical indicator* from the chart can also be done directly by clicking the *eraser* button at the top right of the *chart window* and then clicking the name of that indicator in the chart legend.

2.3.2. Secondary Charts

A large number of *technical indicators* are available in ***Axial Finance*** for display in the *secondary charts*.

A maximum of four *secondary charts* can be visible simultaneously within the *chart window*, below the *main chart*. When the number of *technical indicators* selected is greater than the number of visible indicators, a

Slideshow system allows them to scroll vertically. To do this, click on the and buttons to scroll vertically in either direction.

i. Transfer the *technical indicators* from the ***Library*** on the left into the ***Selection*** frame on the right. To perform this transfer, double-click the *technical indicator* or select it and click the button.

   The same *technical indicator* can be added to the chart multiple times.

   To remove a *technical indicator*, select it in the ***Selection*** frame and click the button, or press the **Del** key on the keyboard.

ii. For each *technical indicator*, define its parameters by selecting it in the ***Selection*** frame and choosing from the available parameters displayed directly below.

   For each *technical indicator*, you can add two threshold lines by checking the corresponding boxes and entering the threshold level.

iii. Define the number of *secondary charts* visible simultaneously (maximum of 4). Choose a value from 0 to 4 in the ***Display*** box.

The height of each *secondary chart* can be modified by placing the mouse pointer above the horizontal separator line between these charts and dragging vertically with the mouse button held down.

When the mouse is inside a *secondary chart*, the two buttons and appear in the top right corner of the *secondary chart*. Clicking on the icon permanently removes this *secondary chart* from the *chart window* (an action identical to deleting an *technical indicator* with the *eraser*). Clicking on the button (this button is only present if multiple *secondary charts* are open) will cause this chart to occupy the full height of all visible *secondary charts*, with the other *secondary charts* being temporarily hidden. To display all *secondary charts* again, click on this button once more.

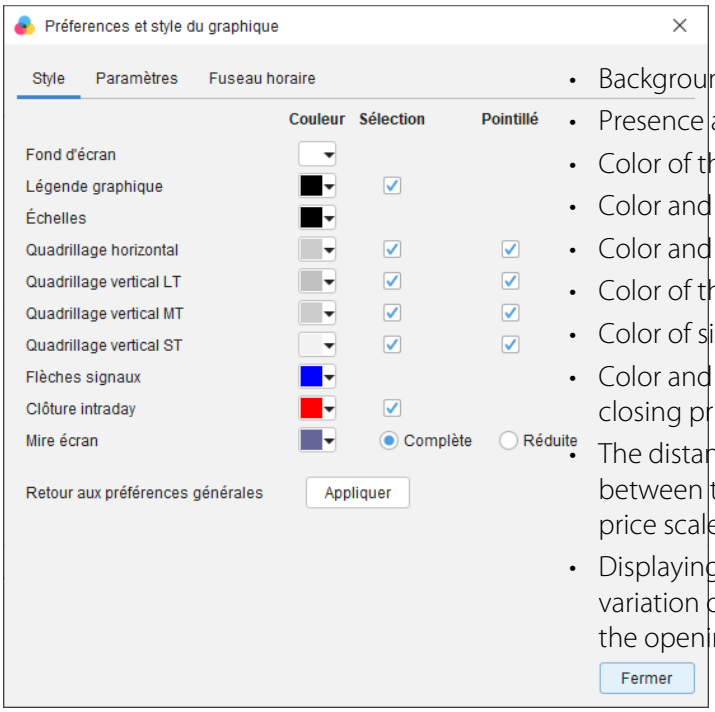
2.4. Choosing the Chart Drawing Style

The style of the *chart windows* (background color, grid, etc.) can be defined at two different levels:

i. In the general menu ***Preferences***, option ***Default chart definition***. In this case, the chosen style will apply to all charts except for those for which a specific style has been specified.

ii. In the ***Display*** menu, option ***Chart style*** of the *chart window*, to specify a specific style for this window. When a specific style has been specified for a window, it will retain that style until a return to the preferences' general style is requested by clicking on the **Return to general preferences** button present in the style definition window.

Style elements:



- Background color
- Presence and color of legends
- Color of the scale graduations
- Color and display (solid or dotted) of the horizontal grid line
- Color and display (solid or dotted) of the vertical grid line
- Color of the crosshair
- Color of signal arrows resulting from a signal applied to the chart
- Color and presence of a dotted line marking the previous day's closing price in intraday charts
- The distance in pixels, when the *time cursor* is in its resting position, between the last price on the right and the vertical edge of the price scale.
- Displaying an arrow at the level of the last price showing the % variation of this last price compared to the previous day's close or the opening price of the session.

2.5. Vertical Scale of the Main Chart

The vertical scale of the *main chart* is automatically determined by default to best adjust the price plot to the available height of the *chart window*.

To modify the maximum and minimum graduations of the scale, press and drag vertically with the mouse within the scale area:

- By starting to press in the upper part of the scale, the maximum graduation will be modified.
- By starting to press in the lower part of the scale, the minimum graduation will be modified.

When the maximum or minimum graduations have been changed by the user, a light blue vertical line at the left edge of the scale indicates this change, and the vertical ends of this blue line indicate the maximum and minimum graduations calculated in automatic mode.

After a modification to the scale, double-click within the scale area to return to automatic mode.

To choose a logarithmic or linear vertical scale, select this mode in the ***Display*** menu of the *chart window*, under the ***Price Scale*** option, then ***Logarithmic*** or ***Linear***.

2.6. How the Time Cursor Works

The *time cursor* allows you to move the chart horizontally along the timescale and zoom in on any time interval.

This *cursor* consists of two parts:

- The main part with the scale graduations and the cursor for controlling the horizontal movement of the chart. This movement can be performed in several different ways:
  i. By clicking and dragging the center of the cursor with the mouse, the entire chart shifts to the right or to the left.

ii. By clicking and dragging the left end of the cursor, the left origin of the prices is shifted, while the position of the last price on the right remains unchanged.

iii. By clicking and dragging the right end of the cursor, the right end of the prices is shifted, while the position of the first price on the left remains unchanged.

iv. By moving the cursor beyond the right or left end, fast scrolling of the chart is triggered.

- On the right are three buttons:
  1. to shift left by a single bar per click
  2. to shift right by a single bar per click
  3. to return the chart to its resting position

The resting position of the chart corresponds, for the selected duration and frequency, to the positioning of the prices across the entire width available in the *chart window*window. For example, if a duration of *6 months* with a *Daily* frequency is selected, the resting position displays the last 6 months of prices across the available width. Subsequently, using the time cursor allows you to go back in time as far as the origin of the prices present in the software's database.

In the case of intraday frequency charts (tick-by-tick, seconds, minutes, or hours), the duration of the available history in the chart depends on the selected duration. The larger the duration, the further back in time it will be possible to go. For example, by selecting a duration of 2 days, it will be possible to go up to 5 days back at most. To go beyond this, one must select a longer duration, such as one week.

2.7. X,Y Cursor and Price Label

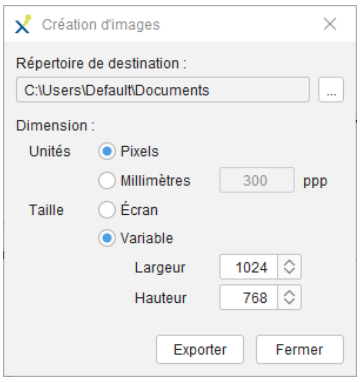
By pressing the left mouse button on the chart surface and moving it, ***Axial Finance*** displays a cursor (vertical-horizontal lines) as well as a label with details of the price, the date of the vertical line, as well as the values of the indicators present in both the main chart and the secondary charts:

2.8. Exporting a Chart Image

The chart can be exported as a PNG (Portable Network Graphics) image file. The user then has the possibility to include this chart in a document or transmit it in an email.

The image can be exported:

- with the same pixel dimensions as the currently open *chart window*
- with a different dimension set in pixels or centimeters



i. In the ***Display*** menu of the *chart window*, choose the option ***Export chart*** to open the dialog window shown here.
ii. Define the ***Destination Directory*** where the image file will be saved by clicking the **Modify** button.
iii. Choose the unit of measurement for the image dimension, ***Pixels*** or ***Millimeters***. In the case of a dimension in millimeters, the user can also define the image resolution in dpi (dots per inch).
iv. Choose the image size by checking ***Screen Size***, or ***Variable Size*** and then setting the width and height (in pixels or millimeters).
v. Click on the **Export** button. The image file is available in the destination directory.

3. Graphical Tools

3.1. General Information

Axial Finance allows for an unlimited number of segments, lines, texts, rectangles, triangles, circles, Fibonacci figures, Gann figures, etc. to be inscribed in the charts.

These drawings are automatically saved in memory and reappear automatically upon selecting the instrument.

To perform a drawing, you can:

- either in the icon bar of the *chart window*, choose from the dropdown menu at the icon the type of figure to draw,
- or choose from the ***Display*** menu of the *chart window* the option ***Draw*** and then the type of figure to draw.

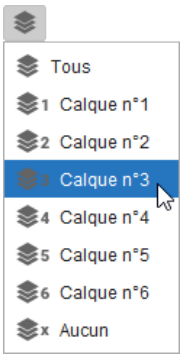
> **Important**
>
> As soon as a figure type is selected for drawing, the mouse pointer changes into a cross to signify the activation of this function, and a label attached to the cursor indicates the chosen figure. Upon completion of the drawing, this function remains active, allowing you to draw another figure of the same type, and so on. To terminate or interrupt the drawing function, click in the chart with the right mouse button or press the **Esc** key on the keyboard.

3.2. Multi-layer Drawing Mode

Axial Finance allows for the implementation of a **multi-layer** mode, also known as **layers** mode.

With this drawing mode, the user can decide to draw different graphical figures in a particular *layer*, on the understanding that these drawings will be invisible when the chart is requested for another *layer*. Six different *layers* are available.

For a single instrument, an analysis inscribed in one of the *layers* will be invisible from other *layers*. These different analyses can be grouped into a single chart by selecting the global *layer* ***All***.



- Define the *layer* before starting to draw figures in the chart. From the function buttons of the *chart window*, open the dropdown menu of the and choose either the ***All*** option or one of the 6 ***layers***.
- When the ***All*** option is selected, the drawings performed will be visible in all *layers*.
- When the chart is in one of the 6 *layers*, the drawings performed will only be visible in that *layer* or in the *layer* ***All***.

3.3. Drawing Horizontal, Vertical, Oblique, or Parallel Lines

Select the type of line to draw as indicated above.

- For a horizontal or vertical line, click once in the chart to define the location of the line.
- For an oblique line, click twice successively to define two points for this oblique line.
- For two parallel lines, click three times successively to define these parallels.

To modify the position of a drawn line, select it with the mouse cursor and drag it within the chart while holding down the left mouse button.

To delete a line, select it with the mouse cursor and click with the right mouse button to open the context menu and then choose the ***Delete*** option, or press the **Del** key on the keyboard.

3.4. Drawing Line Segments, Arrows, Rectangles, Triangles, Circles, or Ellipses

3.4.1. Drawing

Select the type of drawing:

- click with the left mouse button at the starting point of the figure
- then, depending on the type of figure, successively at the other points defining the figure.

3.4.2. Moving

- Select an end of the figure or the entire figure by positioning the mouse cursor over its center. A square symbol appears at the selected end or all ends of the figure.
- Press and hold the left mouse button while moving it.
- When the end or the figure is in the desired location, release the left mouse button.

3.4.3. Copying

- Select the figure by positioning the mouse cursor over it.
- Click with the right mouse button to open the context menu and choose the ***Copy*** option.

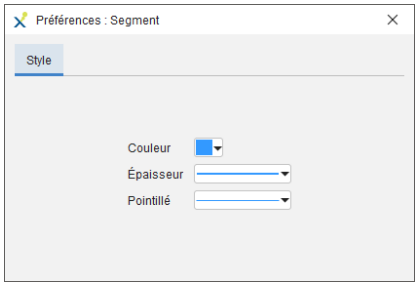
The copy is placed below the original and can subsequently be moved.

3.4.4. Deleting

- Select the figure by positioning the mouse cursor over it.
- Click with the right mouse button to open the context menu and choose the ***Delete*** option or press the **Del** key on the keyboard.

3.4.5. Modifying Characteristics

- Select the figure by positioning the mouse cursor over it.
- Click with the right mouse and button to open the context menu and choose the ***Modify*** option to open the dialog window below. This window allows you to modify the color, thickness of the line, and the dotted line type.



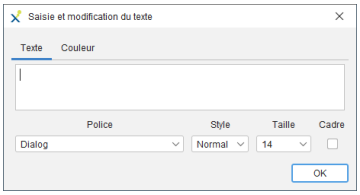
3.4.5.1. Magnet Function for Precise Positioning in the Chart

For certain drawings, the user may wish to position an end exactly at the price of a high, low, closing, etc. price. To do this, ***Axial Finance*** has a *magnet* function that can be enabled (or disabled) from the ***Display*** menu of the chart window.

With the *magnet* enabled, drag the end of the drawing to a price close to the target price. Upon approach, a gray circle appears on that price to indicate its selection. Release the left mouse button. The end of the drawing then automatically positions itself on this price.

3.5. Writing Text

3.5.1. Writing a New Text



i. Select the ***Text*** option as shown above to open the dialog window shown here.
ii. Enter the text and define the font, style, and character size.
iii. Choose the text color by opening the Color tab to access the palette of choices.

The first character of the text is positioned, depending on whether the context menu was opened by clicking with the left mouse button or if the ***Display*** menu option ***Text*** was selected from the top left of the *main chart*.

3.5.2. Changing Position

- Select this text by placing the mouse cursor over the first character of the text. The entire text will be surrounded by a rectangle.
- Press and hold the left mouse button while moving the text to the desired location.

Moving text within the *main chart* can only be done within that same chart, as can moving text within a *secondary chart*.

3.5.3. Modifying Characteristics

- Select this text by placing the mouse cursor over the first character of the text. The entire text will be surrounded by a rectangle.

- Either double-click on this first character or open the context menu (right-click) and choose the ***Modify*** option to open the previous dialog window.
- Then proceed as for entering a new text.

3.5.4. Deleting

- Select this text by placing the mouse cursor over the first character of the text. The entire text will be surrounded by a rectangle.
- Click with the right mouse button to open the context menu and choose the ***Delete*** option or press the **Del** key on the keyboard.

3.6. Drawing Fibonacci, Gann Figures, or Speed Lines

The procedure is identical for drawing each of these figures. These figures are based on a **reference segment** that is drawn in the same way as an ordinary segment after defining the figure type.

- Select the type of figure to draw as indicated above.
- Click with the left mouse button at the origin and then at the end of the reference segment.

To move or cancel a figure, the procedure is identical to that for an ordinary segment applied to the **reference segment**.

In the case of Fibonacci cycles, the reference segment is by principle the line segment located on the horizontal axis and connecting the first two vertical lines (the origin and line no. 1).

3.7. Drawing Andrews' Forks

- Locate the three pivot points of the fork on the chart.
- Select the type of figure to draw as indicated above.
- Click successively with the left mouse button at the location of the first, second, and third pivot points. The figure appears from the second pivot point and settles with the third pivot point.

To move or cancel a figure, the procedure is identical to that for an ordinary segment.

4. Technical Indicators

4.1. General Information

Axial Finance provides a library of many pre-programmed and fully customizable *technical indicators*.

These *technical indicators* are classified by nature:

- Trend indicators
- Momentum indicators
- Volatility indicators
- Volume indicators
- Market indicators
- Support-resistance indicators

and the **Help** button in the indicator selection window allows you to consult their explanatory sheet which:

- indicates the nature of the indicator

- provides its calculation method
- presents a graphical example
- specifies how to interpret it

> **Important**
>
> This documentation is also available on the Axial Finance website at the following address: https://www.axialfinance.com/en/produits/indicateurs.jsp.

5. Synthetic Indicator

5.1. General Information

The *synthetic indicator* is designed to calculate, for a list of instruments, the percentage of those instruments that meet a *screening rule* or a *signal*.

Axial Finance allows you:

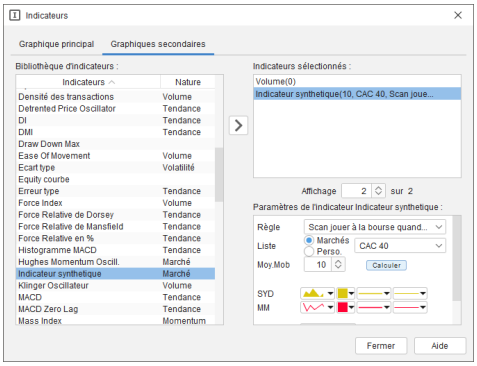
1. to choose a list of instruments relative to a market, an index, or a *personal list*
2. to choose a *screening rule* from the library
3. to display this *synthetic indicator* in a *secondary chart*

> **Note**
>
> To obtain a *synthetic indicator* based on one of the *signals* in the library, simply create a specific *screening rule* by including this *signal* under the AND condition.

5.2. Implementation

To create and display a *synthetic indicator*:

i. If necessary, create and add the *screening rule* to be used in the *synthetic indicator* within the library (see the paragraph Creation and Editing of Screening Rules for the rule creation procedure).
ii. Add the *synthetic indicator* to a *secondary chart* and then define its parameters.



iii. Select the ***Rule*** from the dropdown list of the *screening rule* to be applied from the library
iv. Define the list of instruments to be used in the calculation by selecting the corresponding option: ***Market/ Index*** or ***Personal List***

v. Define the curve style for the indicator

vi. Launch the calculation of the *synthetic indicator* by clicking on the **Calculate** button.

5.3. Example of a Synthetic Indicator Based on the RSI

Consider the RSI with period `pRSI` and let us define a *personal indicator* that calculates its moving average with period `pMM`. Let us write the label of this *personal indicator* in the form `MMRSI(n, pRSI, pMM)` where `MMRSI` is the code for this *personal indicator* which therefore includes the three parameters `n`, `pRSI` and `pMM`.

Let us then define the following *signal*:

```
MMRSI(0, pRSI, pMM1) > MMRSI(0, pRSI, pMM2)
```

with the following parameter values:

- `pRSI = 8`
- `MM1 = 8`
- `pMM2 = 12`

The *signal* is therefore true when the first moving average `MMRSI(0, pRSI, pMM1)` is greater than the second `MMRSI(0, pRSI, pMM2)`.

The histogram chart of the *s synthetic indicator* provides for each period the percentage of instruments in the CAC 40 index for which the previous *signal* is true.

Chapter 3. Real-Time

1. General Information

1.1. Introduction

The *real-time feed* uses Internet streaming transmission to receive stock market transactions into the software at the very moment they are executed on the exchange.

Depending on the subscription(s) taken out, the feed transmits data relating to Stocks, Indices, Trackers, Futures, Commodities and Forex.

Upon subscribing to the *real-time feed*, the user receives a username and password which are automatically registered in the software.

Axial Finance uses this data feed to update in real-time:

- Price charts
- Price tables
- Screeners
- Rankings
- Order books
- Transaction lists
- TickFlow

and to detect real-time alerts defined by the user.

1.2. Opening the Real-Time Feed

The real-time feed starts automatically upon opening the software, provided a valid subscription has been taken out. The feed status button located at the top right of the ***Market Monitoring*** area then changes from red to green upon effective opening of the feed.

To interrupt the *real-time feed*, click on the status button, which will then turn red.

> **Note**
>
> During the day, it may happen that the Internet connection interrupts the feed. In this case, click once on the feed status button while it is still green to turn it red, then a second time to turn it back to green.

1.3. Data Transmitted in the Real-Time Feed

The *real-time feed* transmits the following data for each instrument:

1. Instrument identification
2. Price, time and volume of each transaction
3. Cumulative volume exchanged since the session opening
4. Session opening price
5. Session high price

6. Session low price
7. Previous day's closing price
8. Price, time and volume of the best bid
9. Price, time and volume of the best ask

and additionally for Stock-type instruments, the order book:

1. Price of the 10 best asks
2. Number of orders for these 10 best asks
3. Volume of the 10 best asks
4. Price of the 10 best bids
5. Number of orders for these 10 best bids
6. Volume of the 10 best bids

2. Price Charts

Axial Finance has no limitation regarding the number of price charts that can be opened simultaneously with real-time data. Only computer capacity (CPU speed and RAM size) may encourage limiting their number to maintain acceptable graphical interface response performance.

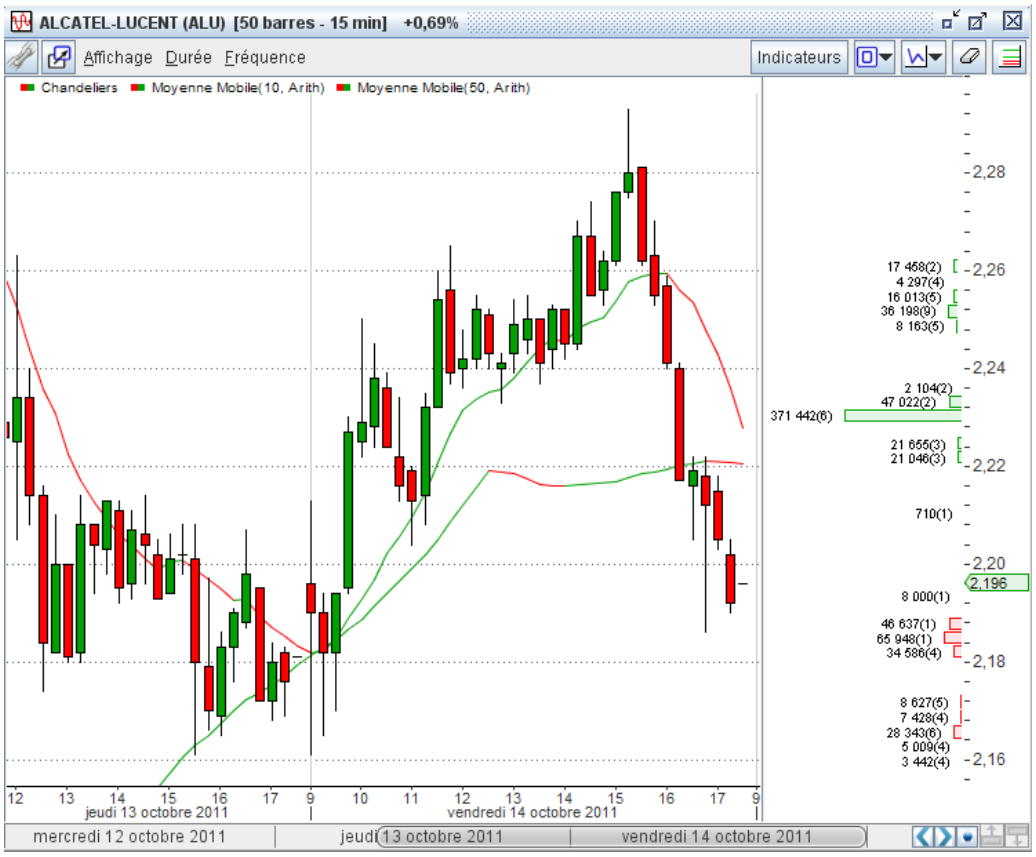
The ***Duration*** and ***Frequency*** menus of the chart allow you to choose the number of prices displayed. Then, using the *time slider* and its associated buttons, you can adjust the useful duration (see chapter Chart Window).

In real-time, the chart is updated with each new transaction received and automatically shifts one position to the left with every creation of a new bar of the selected frequency. In the vertical scale, just below the last

price, you can follow the time remaining in minutes and seconds until the closing of the current bar. To do this, activate this option in the ***View*** menu, under ***Chart Style***, by checking the box ***End-of-bar countdown***.

> **Note**
>
> This end-of-bar countdown activation option can also be activated in the general ***Preferences*** menu, under ***Default chart definition***. It will then apply to all *chart windows* in the workspace.

The order book for the instrument can be displayed directly within the chart by selecting the ***Open order book*** option from the ***View*** menu. It is displayed in the form of horizontal histograms to the right of the prices, indicating the number of orders and the volume requested at each level of the book:



3. Price Tables

3.1. General Information

The **Expert** version allows opening two price tables simultaneously in the workspace, and the **Maestro** version allows an unlimited number.

Each *price table* displays, in several forms, the data transmitted via the *real-time feed* for the chosen list of instruments.

It is possible to choose to display instruments:

- from an index of the selected exchange in the *instrument list*,
- or from a *personal list*.

To open a *price table*, click on the button at the top and center of the ***Market Monitoring*** area, or use the general menu ***Workspace*** option ***New Window***.

To close a *price table*, click on the cross in the upper right corner of the *price table* window.

> **Note**
>
> To permanently save this opening or closing in the current workspace, you must save the workspace via the general menu ***Workspace***.

The *price table* can be displayed in the ***Market Monitoring*** area, or in the case of multiple screens, in a window detached from this area to any location on these screens. To detach or reattach the *price table* from the ***Market Monitoring*** area, click on the button at the top left of its window.

The information in the *price table* is displayed across three different pages selectable via a tab box located at the bottom of the table:

- Page ***Price*** for monitoring the last transaction, the best bid, and the best ask
- Page ***Volumes*** for specific monitoring of volumes during the session and particularly for detecting abnormal volumes
- Page ***Pre-opening*** for monitoring the bid and ask before the market opens

3.2. Presentation of the Price Table

Tableau des cours - CAC 40

CAC 40 | Options

Nom valeur	Heure	Dernier	D	%V/Cl	Volume	Achat	Vente	+ Haut	+ Bas	Ouv.	Clôture
CAC 40	14:15:00	6 993,17	↓	-0,31 %	0			7 044,99	6 990,86	7 035,93	7 014,57
VEOLIA	14:14:50	30,7200	↑	2,03 %	576 465	30,7200	30,7300	30,7800	30,1900	30,2300	30,1100
CARREFOUR	14:14:40	15,1450	↑	1,41 %	739 144	15,1400	15,1450	15,1700	14,8900	14,9200	14,9350
TELEPERFORMANCE	14:14:35	377,1000	↑	1,34 %	30 144	377,1000	377,3000	378,4000	373,5000	374,2000	372,1000
LEGRAND	14:14:51	101,4000	↑	1,25 %	183 546	101,3500	101,4500	102,1500	100,6000	100,6000	100,1500
EUROFINS SCIENTIFIC	14:14:50	106,2800	↑	1,22 %	93 545	106,2600	106,3000	106,2800	104,3000	105,3000	105,0000
PERNOD RICARD	14:10:46	210,1000	↑	1,20 %	81 986	210,0000	210,1000	210,4000	208,3000	208,8000	207,6000
MICHELIN	14:14:50	141,5500	↑	1,11 %	117 713	141,5000	141,5500	142,1000	139,8000	140,5000	140,0000
SCHNEIDER ELECTRIC	14:15:04	167,8800	↑	0,95 %	179 977	167,8400	167,8800	168,6000	167,2600	167,6400	166,3000
CAPGEMINI	14:14:38	207,5000	↑	0,92 %	83 212	207,5000	207,6000	210,0000	206,8000	207,1000	205,6000
DASSAULT SYSTEMES	14:13:36	53,8800	↑	0,75 %	216 584	53,8500	53,8700	54,2800	53,4000	53,8200	53,4800
L'OREAL	14:15:02	420,3500	↑	0,50 %	108 447	420,3000	420,4000	427,5500	420,2500	424,0000	418,2500
SAINT GOBAIN	14:14:50	60,9800	↑	0,18 %	249 947	60,9800	60,9900	61,2900	60,8400	61,0200	60,8700
DANONE	14:15:01	53,0900	↑	0,11 %	415 820	53,0900	53,1000	54,0700	52,8700	54,0200	53,0300
ESSILORLUXOTTICA	14:15:01	184,3400	↑	0,11 %	102 942	184,3000	184,3600	185,1600	183,5400	184,7400	184,1400
SOCIETE GENERALE	14:15:02	29,2250	↑	0,10 %	1 002 625	29,2200	29,2250	29,5200	28,8800	29,0450	29,1950
WORLDLINE	14:15:04	48,7700	↑	0,01 %	222 283	48,7700	48,7850	49,1500	48,4650	48,7600	48,7650
RENAULT	14:14:56	30,1000	↓	-0,02 %	447 287	30,0950	30,1150	30,6300	30,0250	30,3000	30,1050
ENGIE	14:15:01	13,1040	↓	-0,23 %	2 160 469	13,1020	13,1060	13,1440	12,9560	13,0820	13,1340
AXA	14:14:50	25,4650	↓	-0,31 %	1 601 909	25,4650	25,4700	25,7100	25,4500	25,5400	25,5450
HERMES INTL	14:15:01	1572,0000	↓	-0,32 %	23 446	1571,0000	1572,0000	1598,5000	1570,00...	1590,5000	1577,0000
VIVENDI	14:14:46	11,2050	↓	-0,40 %	825 416	11,2000	11,2100	11,2900	11,1850	11,2050	11,2500
ORANGE	14:14:50	9,1830	↓	-0,41 %	2 058 054	9,1830	9,1840	9,2500	9,1720	9,2200	9,2210
AIR LIQUIDE	14:15:01	154,6600	↓	-0,44 %	198 637	154,6600	154,6800	156,2400	154,3800	155,8000	155,3400
SANOFI	14:15:03	84,1700	↓	-0,51 %	394 295	84,1600	84,1700	84,9500	84,0200	84,9000	84,6000
BOUYGUES	14:15:04	30,2700	↓	-0,59 %	349 725	30,2600	30,2800	30,4800	30,1700	30,3500	30,4500
VINCI	14:15:02	86,6100	↓	-0,60 %	425 845	86,6000	86,6100	87,4300	86,2200	87,1600	87,1300

Prix | Volumes | Pré-ouverture

The *price table* includes the following elements:

3.2.1. Toolbar

In its upper part, a toolbar containing:

1. The button to associate the table with a group of windows. Any instrument selected in the table by a double click will be assigned to the windows of this group.

2. The button to detach or reattach the window.
3. A drop-down list to select the instrument list to display.
4. An ***Options*** menu to command the most frequently performed operations:

Add a chart window	Opens a chart window for the instrument selected in the table
Open order book	Opens an order book window for the instrument selected in the table
Real-time alerts	Opens the alert programming window for the instrument selected in the table
Instrument details	Opens the instrument details page for the selected instrument in the table
Notepad	Opens the notepad for the selected instrument in the table
Manage personal lists	Opens the management window for *personal lists*
Duplicate price table	Duplicates the price table

3.2.2. Three pages for real-time data display

3.2.2.1. Price Page

When the *real-time feed* is open, each time there is a change in the last price, cumulative volume, high price, low price, or bid/ask price, the video in the corresponding table cell will invert for a fraction of a second to attract attention.

Upon closing the feed, the data present at that moment is kept in memory until the next reopening.

In the column to the right of the last price, a vertical arrow colored green, black, or red characterizes the direction of the price change compared to the previous day's closing price, respectively representing an increase, no change, or a decrease.

> **Note**
>
> By double-clicking on a row in the *price table*, the prices for that instrument will automatically be displayed in the selected *chart window*.

3.2.2.2. Volumes Page

This page allows you to monitor the evolution of volumes during the session and to be immediately informed in case of unusual evolution (see the description in the following paragraph Volume Evolution Monitoring).

3.2.2.3. Pre-opening Page

This page allows you to monitor, before the session opening, the evolution of the best bid and ask prices, and to instantly know the percentage difference compared to the previous day's closing price.

3.3. Management of personal instrument lists

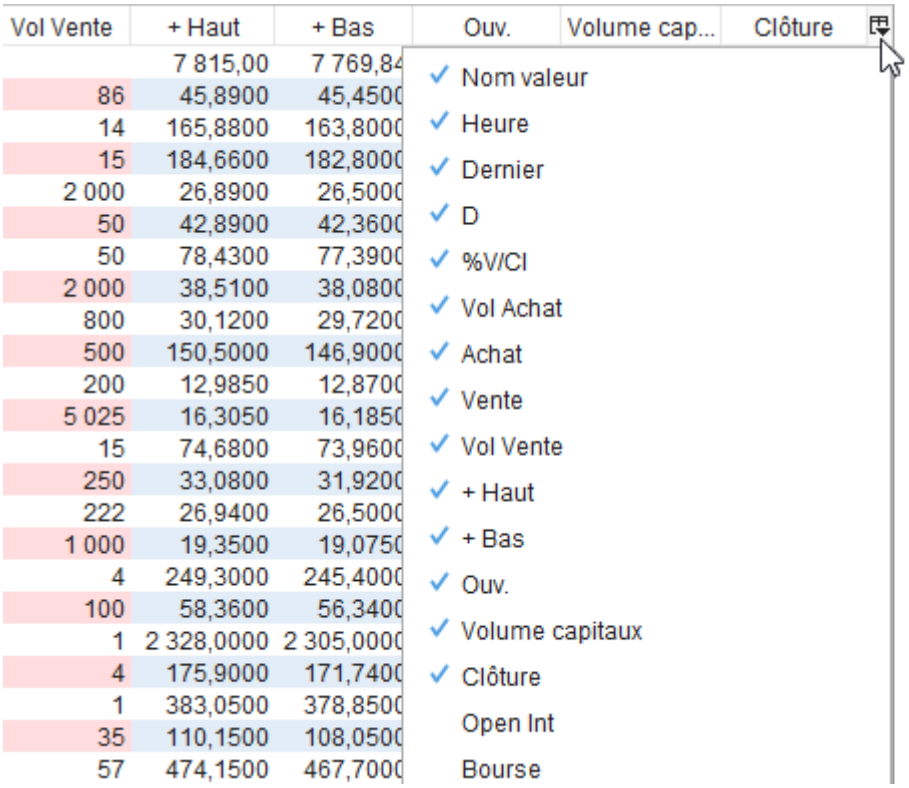
Click on the button in the *price table* menu to open the management window for *personal lists*.

The procedure for managing *personal lists* is described in the paragraph Creation and Update of Personal Lists.

3.4. Column Configuration

Tables can be configured to display only the desired columns. This column configuration is attached to the *price table* of a *workspace* and is therefore specific to this table.

i. Open the dialog window below by clicking on the button in the upper right corner of the table.



ii. Check the names of the columns to display.

The positions of the displayed columns can be swapped in the table by selecting their header and dragging them horizontally. These positions are saved in memory.

3.5. Sorting rows in the price table

Rows in the *price table* on the ***Price*** and ***Pre-opening*** pages can be automatically sorted in ascending or descending order by clicking on the column header that determines the data by which the sort is performed.

This sorting is automatic when the ***Automatic Sorting*** box is checked. In this case, with every arrival of new data in the *real-time feed*, the rows will be reordered. For example, if the **Change %** column has been selected for sorting, instruments will be systematically sorted by ascending or descending percentage change.

3.6. Display of the Notepad

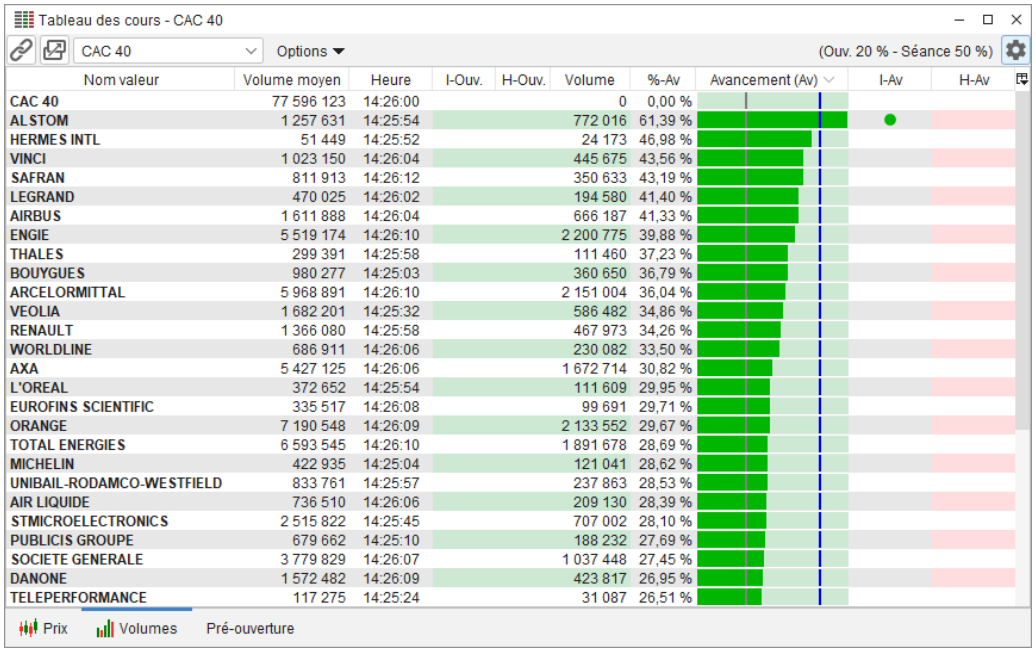
For each instrument on the ***Price*** page, a personal comment can be recorded in a notepad:

i. Select the row of the instrument in the table.
ii. Right-click with the mouse to open the context menu and choose the ***Notepad*** option, or click on the button.
iii. A dialog window opens to record or modify a comment (maximum 2000 characters).

When a comment is present in the notepad, an icon appears to the right of the instrument name in the *price table*.

3.7. Monitoring Volume Evolution

The ***Volumes*** tab of the *price table* displays the table below to graphically monitor the evolution of volumes exchanged during the session.



Nom valeur	Volume moyen	Heure	I-Ouv.	H-Ouv.	Volume	%-Av	Avancement (Av)	I-Av	H-Av
CAC 40	77 596 123	14:26:00			0	0,00 %			
ALSTOM	1 257 631	14:25:54			772 016	61,39 %		●	
HERMES INTL	51 449	14:25:52			24 173	46,98 %			
VINCI	1 023 150	14:26:04			445 675	43,56 %			
SAFRAN	811 913	14:26:12			350 633	43,19 %			
LEGRAND	470 025	14:26:02			194 580	41,40 %			
AIRBUS	1 611 888	14:26:04			666 187	41,33 %			
ENGIE	5 519 174	14:26:10			2 200 775	39,88 %			
THALES	299 391	14:25:58			111 460	37,23 %			
BOUYGUES	980 277	14:25:03			360 650	36,79 %			
ARCELORMITTAL	5 968 891	14:26:10			2 151 004	36,04 %			
VEOLIA	1 682 201	14:25:32			586 482	34,86 %			
RENAULT	1 366 080	14:25:58			467 973	34,26 %			
WORLDLINE	686 911	14:26:06			230 082	33,50 %			
AXA	5 427 125	14:26:06			1 672 714	30,82 %			
L'OREAL	372 652	14:25:54			111 609	29,95 %			
EUROFINS SCIENTIFIC	335 517	14:26:08			99 691	29,71 %			
ORANGE	7 190 548	14:26:09			2 133 552	29,67 %			
TOTAL ENERGIES	6 593 545	14:26:10			1 891 678	28,69 %			
MICHELIN	422 935	14:25:04			121 041	28,62 %			
UNIBAIL-RODAMCO-WESTFIELD	833 761	14:25:57			237 863	28,53 %			
AIR LIQUIDE	736 510	14:26:06			209 130	28,39 %			
STMICROELECTRONICS	2 515 822	14:25:45			707 002	28,10 %			
PUBLICIS GROUPE	679 662	14:25:10			188 232	27,69 %			
SOCIETE GENERALE	3 779 829	14:26:07			1 037 448	27,45 %			
DANONE	1 572 482	14:26:09			423 817	26,95 %			
TELEPERFORMANCE	117 275	14:25:24			31 087	26,51 %			

This table presents for each instrument:

1. The ***Average Volume*** column indicates the *reference volume* calculated over the period defined by the user.
2. The ***Time*** column indicates the time of the last volume change during the session.
3. The ***I-Open*** column, where a green dot appears when an unusual volume is detected at the opening.
4. The ***H-Open*** column indicates at what time an unusual volume was detected at the opening.
5. The ***Volume*** column indicates the cumulative session volume.
6. The ***%-Av*** column gives the percentage of cumulative volume compared to the *reference volume*.
7. The ***Progress*** column shows the progress of the cumulative volume with the following information:
   - The light green background area indicates the *reference volume*.
   - The green bar shows the session's cumulative volume.
   - The vertical gray bar indicates the position of the level specified for the opening alert.
   - The vertical blue bar indicates the position of the level specified for the intraday alert.
8. The ***I-Av*** column, where a green dot appears when an unusual volume is detected during the session.
9. The ***H-Av*** column indicates at what time an unusual volume was detected during the session.

3.8. Alerts on Significant Volumes

3.8.1. General Information

Axial Finance has a specific volume alert system to detect instruments whose traded volumes evolve unusually during the market session.

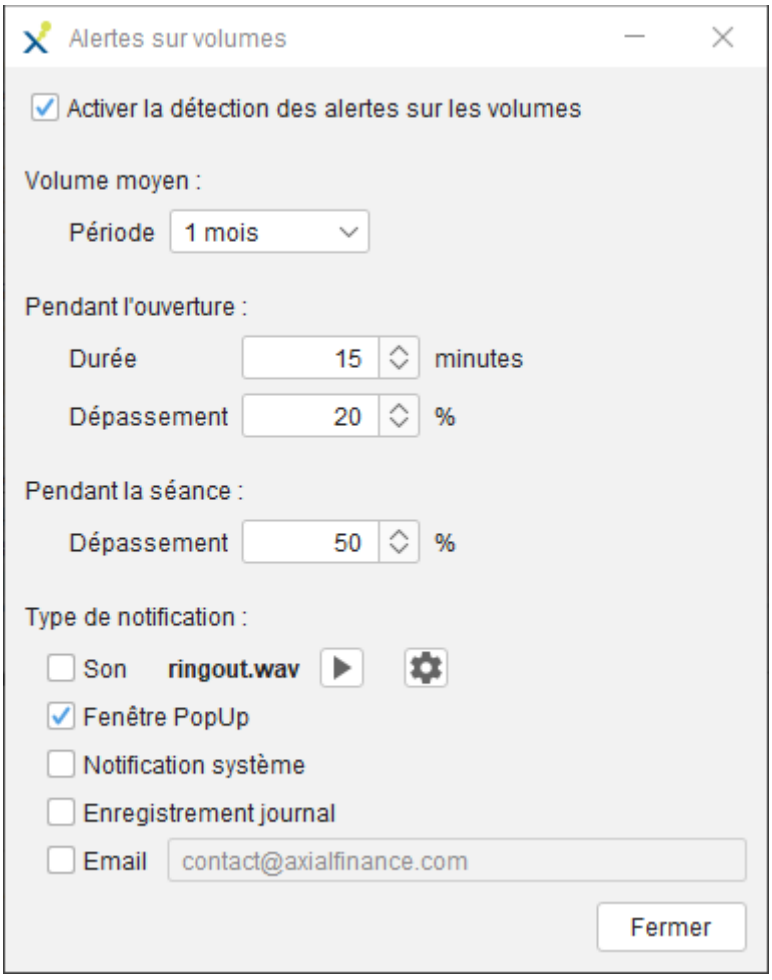
This system allows for the detection of two unusual evolutions:

1. At the opening of the session, when the volume of traded instruments exceeds a certain threshold.
2. During the session, when the cumulative daily volume exceeds a certain threshold.

> **Important**
>
> This alert system uses the concept of *reference volume*, which is equal to the average daily volumes over a given period.

3.8.2. Defining Alert Parameters

On the ***Volumes*** page, click on the **Settings** button at the top of the *price table* to open the dialog window below:



This window allows you to adjust the parameters for detecting volume alerts.

i. Activate alerts by checking ***Enable volume alert detection***.
ii. Under ***Average Volume***, define the period over which the *reference volume* should be calculated. A drop-down list allows you to choose a specific duration.
iii. Under ***During Opening***, choose the duration in consecutive minutes following the market opening during which detection will be active. Then, define the threshold of excess from which the alert will be triggered.

    For example, with a threshold of 20% and a reference volume of 1,200,000, the alert will be triggered if during the opening period the cumulative volume exceeds 240,000.

iv. Under ***During Session***, define the threshold of excess from which the alert will be triggered during the session.
v. Finally, define the ***Notification Type*** used when an exceedance is detected.

4. Order Books

4.1. General Information

The *order book* allows you to consult the best bids and asks in real-time.

Axial Finance displays *order books* in three different forms:

i. In tabular form within an independent window
ii. As a histogram chart in an independent window
iii. Directly within the price chart (see paragraph Price Charts)

Axial Finance has no limit on the number of order books that can be opened simultaneously.

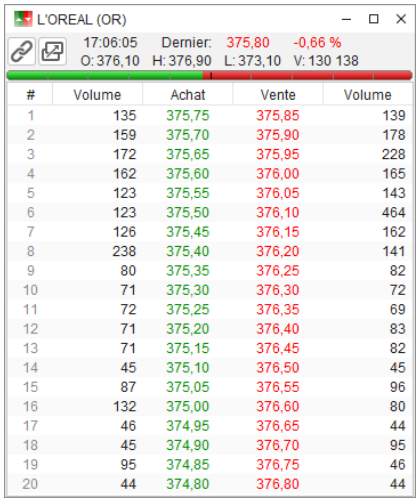
4.2. Tabular Display

To open this type of *order book*, click on the button at the top and center of the ***Market Monitoring*** area, or use the general menu ***Workspace*** option ***New Window***.

To close this *book*, click on the cross in the upper right corner of the window.

> **Note**
>
> To permanently save this opening or closing in the current workspace, you must save the workspace via the general menu ***Workspace***.

The book opens with the instrument selected in the *instrument list*. To change the instrument, select it with the mouse in the *instrument list*, then, while holding down the left mouse button, drag the pointer to the order book and release the button once you have arrived over it.



#	Volume	Achat	Vente	Volume
1	135	375,75	375,85	139
2	159	375,70	375,90	178
3	172	375,65	375,95	228
4	162	375,60	376,00	165
5	123	375,55	376,05	143
6	123	375,50	376,10	464
7	126	375,45	376,15	162
8	238	375,40	376,20	141
9	80	375,35	376,25	82
10	71	375,30	376,30	72
11	72	375,25	376,35	69
12	71	375,20	376,40	83
13	71	375,15	376,45	82
14	45	375,10	376,50	45
15	87	375,05	376,55	96
16	132	375,00	376,60	80
17	46	374,95	376,65	44
18	45	374,90	376,70	95
19	95	374,85	376,75	46
20	44	374,80	376,80	44

The *order book* displays the following information:

- In its upper part, a reminder of the time and price of the last transaction, the opening price, the high, the low, and the cumulative session volume.
- A horizontal green/red graduated bar showing the instantaneous buying and selling pressure.
- The different levels of the bid and ask, with for each level the price, the number of orders, and the volume of those orders.

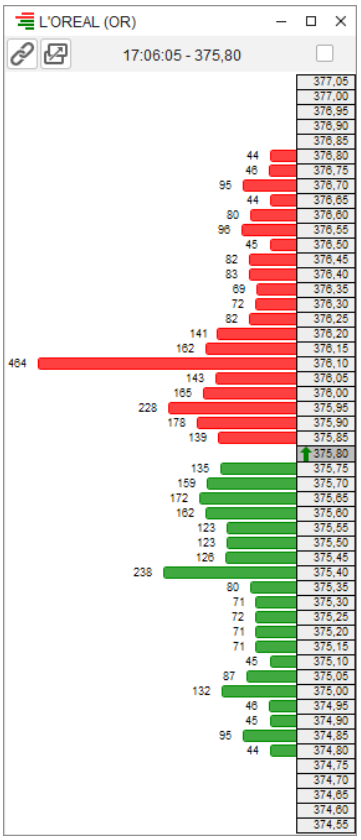
4.3. Histogram Display

To open this type of *order book*, click on the button at the top and center of the ***Market Monitoring*** area, or use the general menu ***Workspace*** option ***New Window***.

To close this *book*, click on the cross in the upper right corner of the window.

> **Note**
>
> To permanently save this opening or closing in the current workspace, you must save the workspace via the general menu ***Workspace***.

The book opens with the instrument selected in the *instrument list*. To change the instrument, select it with the mouse in the *instrument list*, then, while holding down the left mouse button, drag the pointer to the order book and release the button once you have arrived over it.



The *order book* is presented as a horizontal histogram. It displays:

- A reminder of the time and price of the last transaction.
- A vertical scale on the right with all the quotation steps for the instrument.
- A vertical arrow in the last transaction box, colored green or red depending on whether this last transaction corresponds to an increase or a decrease in price (otherwise black).
- A green or red rectangle for each bid and ask level, with the volume of orders and the number of orders at that level.

5. Transaction List

Axial Finance has no limit on the number of transaction lists that can be opened simultaneously.

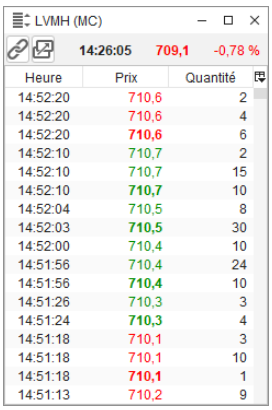
To open a *transaction list*, click on the button at the top and center of the ***Market Monitoring*** area, or use the general menu ***Workspace*** option ***New Window***.

To close this list, click on the cross in the upper right corner of the window.

> **Note**
>
> To permanently save this opening or closing in the current workspace, you must save the workspace via the general menu ***Workspace***.

The list opens with the instrument selected in the *instrument list*. To change the instrument, select it with the mouse in the *instrument list*, then, while holding down the left mouse button, drag the pointer to the list and release the button once you have arrived over it.

Axial Finance displays all transactions executed on the exchange since the start of the session in a real-time table.



A color code allows you to identify the direction of trade evolution:

- Characters are in bold when the transaction was just executed at a price different from the previous one.
- Green when the transaction was executed at a higher price.
- Red when the transaction was executed at a lower price.

6. Real-Time Rankings

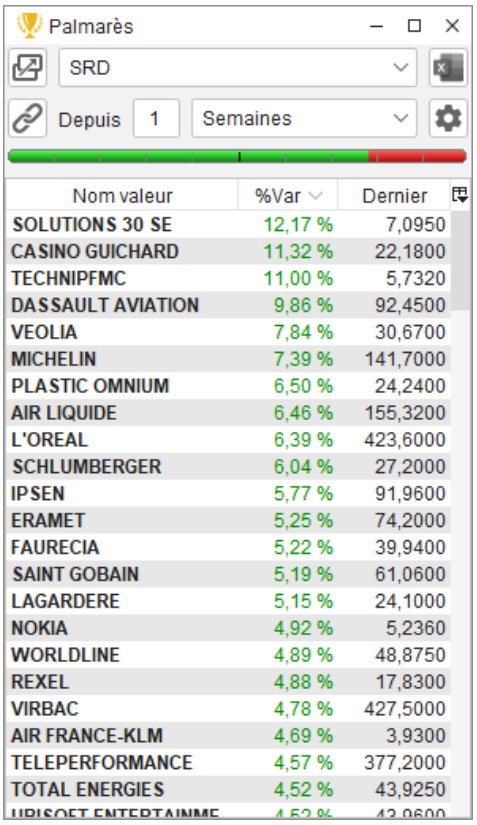
The **Expert** version allows opening two *rankings* simultaneously in the workspace, and the **Maestro** version allows an unlimited number.

To open a *ranking*, click on the button at the top and center of the ***Market Monitoring*** area, or use the general menu ***Workspace*** option ***New Window***.

To close this list, click on the cross in the upper right corner of the window.

> **Note**
>
> To permanently save this opening or closing in the current workspace, you must save the workspace via the general menu ***Workspace***.

The choice of the instrument list is made from a list of international indices or one of the *personal lists* created by the user.



Nom valeur	%Var	Dernier
SOLUTIONS 30 SE	12,17 %	7,0950
CASINO GUICHARD	11,32 %	22,1800
TECHNIPFMC	11,00 %	5,7320
DASSAULT AVIATION	9,86 %	92,4500
VEOLIA	7,84 %	30,6700
MICHELIN	7,39 %	141,7000
PLASTIC OMNIUM	6,50 %	24,2400
AIR LIQUIDE	6,46 %	155,3200
L'OREAL	6,39 %	423,6000
SCHLUMBERGER	6,04 %	27,2000
IPSEN	5,77 %	91,9600
ERAMET	5,25 %	74,2000
FAURECIA	5,22 %	39,9400
SAINT GOBAIN	5,19 %	61,0600
LAGARDERE	5,15 %	24,1000
NOKIA	4,92 %	5,2360
WORLDLINE	4,89 %	48,8750
REXEL	4,88 %	17,8300
VIRBAC	4,78 %	427,5000
AIR FRANCE-KLM	4,69 %	3,9300
TELEPERFORMANCE	4,57 %	377,2000
TOTAL ENERGIES	4,52 %	43,9250

The obtained *ranking* can be exported to Excel.

Each *ranking* allows you to have, in real-time, the ranking of a complete list of instruments over a chosen duration:

- since the session opening
- since the previous day's close
- since n minutes (configurable)
- since n hours (configurable)
- since n sessions (configurable)
- since n weeks (configurable)
- since n months (configurable)
- since January 1st of the current year

At the top of the *ranking*, a green/red graduated bar shows the % of instruments up or down.

The ranking list indicates the last price and the percentage change over the chosen duration. By clicking on a column header, you can command the sorting of rows based on the data present in that column.

7. Real-Time Screeners

7.1. General Information

The **Expert** version allows opening one screener in the workspace, and the **Maestro** version allows an unlimited number.

To open a *screener*, click on the button at the top and center of the ***Market Monitoring*** area, or use the general menu ***Workspace*** option ***New Window***.

To close this list, click on the cross in the upper right corner of the window.

> **Note**
>
> To permanently save this opening or closing in the current workspace, you must save the workspace via the general menu ***Workspace***.

The screener searches in real-time, with each arrival of a new transaction, for instruments that meet a *screening rule* from a list and displays the result in a table. The chosen *rule* is one of the rules present in the software library: see chapter Creation and Editing of Screening Rules for how to define such a *rule*.

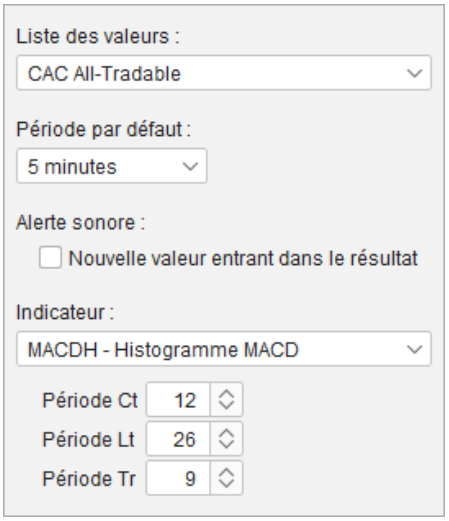
The choice of the instrument list is made from a list of international indices or one of the *personal lists* created by the user.

Screening is performed on prices with an intraday or "end-of-day" periodicity of your choice.

The result is displayed according to a ranking order based on price evolution or relative to the value of a technical indicator.

7.2. Screener Configuration

Click on the ⚙ button to open the configuration window below:



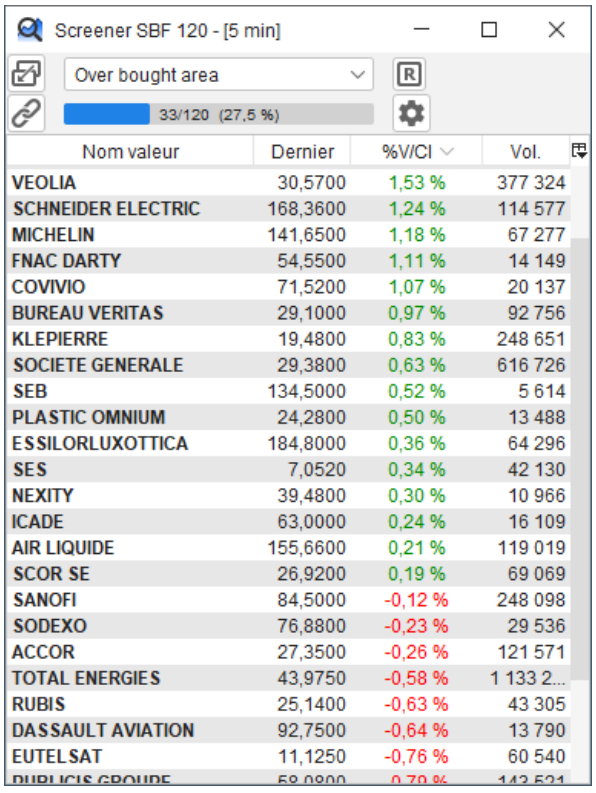
Choose the ***Instrument List*** and the price periodicity from the drop-down lists.

An audible alert can be activated to notify you when a new instrument validates the screener rule and enters the results list.

It is possible to add an indicator that will be calculated in real-time for each result. This indicator can serve to sort the results according to a particular criterion.

7.3. Display of Screening Results

The screener determines in real-time, with each arrival of a new transaction, the instruments which, among the chosen list, meet the selected *screening rule* from the drop-down list. This drop-down list contains all rules present in the software library (see chapter Creation and Editing of Screening Rules).



Nom valeur	Dernier	%V/Cl	Vol.
VEOLIA	30,5700	1,53 %	377 324
SCHNEIDER ELECTRIC	168,3600	1,24 %	114 577
MICHELIN	141,6500	1,18 %	67 277
FNAC DARTY	54,5500	1,11 %	14 149
COVIVIO	71,5200	1,07 %	20 137
BUREAU VERITAS	29,1000	0,97 %	92 756
KLEPIERRE	19,4800	0,83 %	248 651
SOCIETE GENERALE	29,3800	0,63 %	616 726
SEB	134,5000	0,52 %	5 614
PLASTIC OMNIUM	24,2800	0,50 %	13 488
ESSILORLUXOTTICA	184,8000	0,36 %	64 296
SES	7,0520	0,34 %	42 130
NEXITY	39,4800	0,30 %	10 966
ICADE	63,0000	0,24 %	16 109
AIR LIQUIDE	155,6600	0,21 %	119 019
SCOR SE	26,9200	0,19 %	69 069
SANOFI	84,5000	-0,12 %	248 098
SODEXO	76,8800	-0,23 %	29 536
ACCOR	27,3500	-0,26 %	121 571
TOTAL ENERGIES	43,9750	-0,58 %	1 133 2...
RUBIS	25,1400	-0,63 %	43 305
DASSAULT AVIATION	92,7500	-0,64 %	13 790
EUTELSAT	11,1250	-0,76 %	60 540
PUBLICIS GROUPE	58,0800	-0,79 %	142 521

The columns of the results table can be configured by clicking on the button located at the top and right of this table.

Below the drop-down list for choosing the *screening rule*, a horizontal bar indicates the number of instruments contained in the selected list as well as the percentage of instruments found by the screener.

The periodicity of the prices used for screening is indicated on the right of this bar.

8. TickFlow XM

The **Maestro** version of ***Axial Finance*** includes the *TickFlow* module, which allows you to instantly view in a table all transactions exchanged for an entire list of instruments over a certain duration.

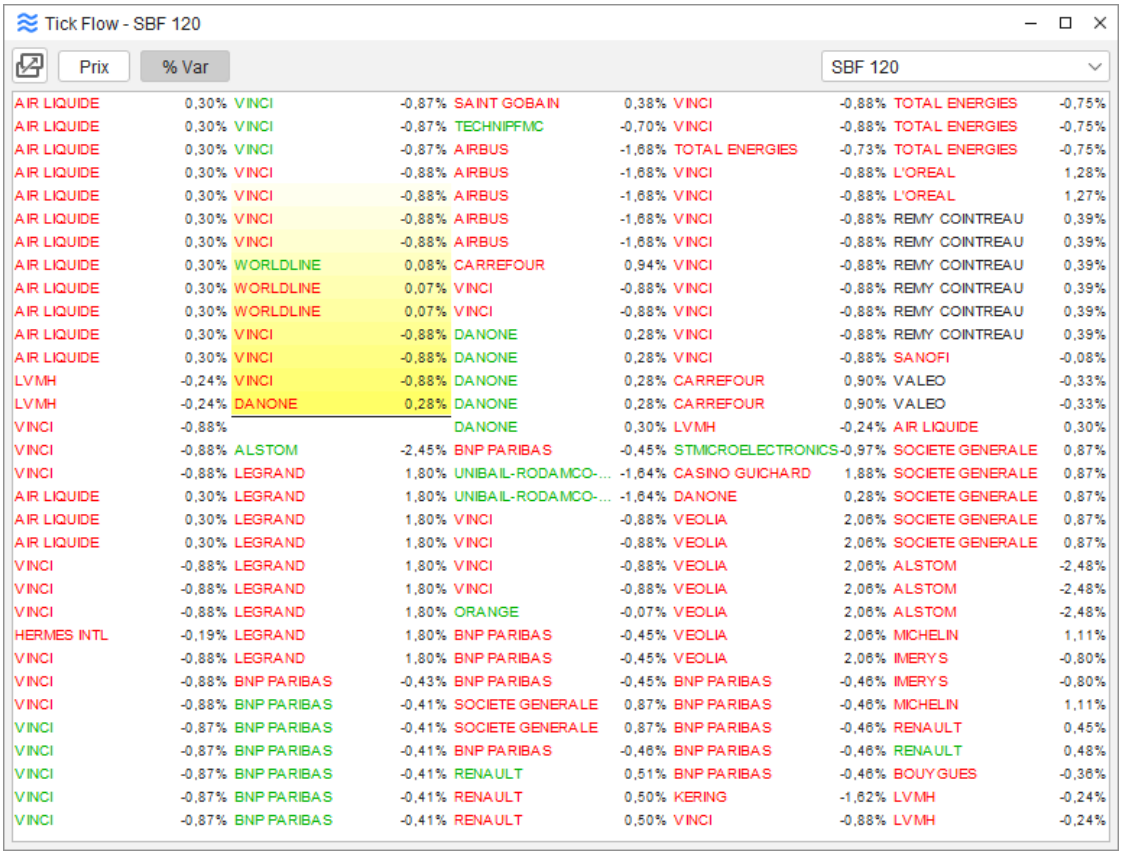
To open the *TickFlow*, click on the button ≋ at the top and center of the ***Market Monitoring*** area, or use the general menu ***Workspace*** option ***New Window***.

The number of columns in the table depends on the window width. By increasing the width and height of the window, you increase the number of transactions that can be observed simultaneously.

Each transaction occupies a cell in the table, which is filled from left to right and from bottom to top as new transactions arrive. The four most recent transactions received are displayed on a yellow background with a black cell just below them to indicate the location of the next incoming transaction. When the last filled cell reaches the bottom right of the *TickFlow* table, it continues to fill the table by starting again at the top left and overwriting the previous transaction.

The dimension of the table as well as the quantity of transactions received determine the observation duration.

This table allows you to see instantly when a large number of transactions are executed on an instrument. In this case, that instrument occupies many cells. This observation signals significant movements in the instrument which will lead to a significant price variation.



AIR LIQUIDE	0,30%	VINCI	-0,87%	SAINT GOBAIN	0,38%	VINCI	-0,88%	TOTAL ENERGIES	-0,75%
AIR LIQUIDE	0,30%	VINCI	-0,87%	TECHNIPFMC	-0,70%	VINCI	-0,88%	TOTAL ENERGIES	-0,75%
AIR LIQUIDE	0,30%	VINCI	-0,87%	AIRBUS	-1,68%	TOTAL ENERGIES	-0,73%	TOTAL ENERGIES	-0,75%
AIR LIQUIDE	0,30%	VINCI	-0,88%	AIRBUS	-1,68%	VINCI	-0,88%	L'OREAL	1,28%
AIR LIQUIDE	0,30%	VINCI	-0,88%	AIRBUS	-1,68%	VINCI	-0,88%	L'OREAL	1,27%
AIR LIQUIDE	0,30%	VINCI	-0,88%	AIRBUS	-1,68%	VINCI	-0,88%	REMY COINTREAU	0,39%
AIR LIQUIDE	0,30%	VINCI	-0,88%	AIRBUS	-1,68%	VINCI	-0,88%	REMY COINTREAU	0,39%
AIR LIQUIDE	0,30%	WORLDLINE	0,08%	CARREFOUR	0,94%	VINCI	-0,88%	REMY COINTREAU	0,39%
AIR LIQUIDE	0,30%	WORLDLINE	0,07%	VINCI	-0,88%	VINCI	-0,88%	REMY COINTREAU	0,39%
AIR LIQUIDE	0,30%	WORLDLINE	0,07%	VINCI	-0,88%	VINCI	-0,88%	REMY COINTREAU	0,39%
AIR LIQUIDE	0,30%	VINCI	-0,88%	DANONE	0,28%	VINCI	-0,88%	REMY COINTREAU	0,39%
AIR LIQUIDE	0,30%	VINCI	-0,88%	DANONE	0,28%	VINCI	-0,88%	SANOFI	-0,08%
LVMH	-0,24%	VINCI	-0,88%	DANONE	0,28%	CARREFOUR	0,90%	VALEO	-0,33%
LVMH	-0,24%	DANONE	0,28%	DANONE	0,28%	CARREFOUR	0,90%	VALEO	-0,33%
VINCI	-0,88%			DANONE	0,30%	LVMH	-0,24%	AIR LIQUIDE	0,30%
VINCI	-0,88%	ALSTOM	-2,45%	BNP PARIBAS	-0,45%	STMICROELECTRONICS	-0,97%	SOCIETE GENERALE	0,87%
VINCI	-0,88%	LEGRAND	1,80%	UNIBAIL-RODAMCO-...	-1,64%	CASINO GUICHARD	1,88%	SOCIETE GENERALE	0,87%
AIR LIQUIDE	0,30%	LEGRAND	1,80%	UNIBAIL-RODAMCO-...	-1,64%	DANONE	0,28%	SOCIETE GENERALE	0,87%
AIR LIQUIDE	0,30%	LEGRAND	1,80%	VINCI	-0,88%	VEOLIA	2,06%	SOCIETE GENERALE	0,87%
AIR LIQUIDE	0,30%	LEGRAND	1,80%	VINCI	-0,88%	VEOLIA	2,06%	SOCIETE GENERALE	0,87%
VINCI	-0,88%	LEGRAND	1,80%	VINCI	-0,88%	VEOLIA	2,06%	ALSTOM	-2,48%
VINCI	-0,88%	LEGRAND	1,80%	VINCI	-0,88%	VEOLIA	2,06%	ALSTOM	-2,48%
VINCI	-0,88%	LEGRAND	1,80%	ORANGE	-0,07%	VEOLIA	2,06%	ALSTOM	-2,48%
HERMES INTL	-0,19%	LEGRAND	1,80%	BNP PARIBAS	-0,45%	VEOLIA	2,06%	MICHELIN	1,11%
VINCI	-0,88%	LEGRAND	1,80%	BNP PARIBAS	-0,45%	VEOLIA	2,06%	IMERYS	-0,80%
VINCI	-0,88%	BNP PARIBAS	-0,43%	BNP PARIBAS	-0,45%	BNP PARIBAS	-0,46%	IMERYS	-0,80%
VINCI	-0,88%	BNP PARIBAS	-0,41%	SOCIETE GENERALE	0,87%	BNP PARIBAS	-0,46%	MICHELIN	1,11%
VINCI	-0,87%	BNP PARIBAS	-0,41%	SOCIETE GENERALE	0,87%	BNP PARIBAS	-0,46%	RENAULT	0,45%
VINCI	-0,87%	BNP PARIBAS	-0,41%	BNP PARIBAS	-0,46%	BNP PARIBAS	-0,46%	RENAULT	0,48%
VINCI	-0,87%	BNP PARIBAS	-0,41%	RENAULT	0,51%	BNP PARIBAS	-0,46%	BOUYGUES	-0,36%
VINCI	-0,87%	BNP PARIBAS	-0,41%	RENAULT	0,50%	KERING	-1,62%	LVMH	-0,24%
VINCI	-0,87%	BNP PARIBAS	-0,41%	RENAULT	0,50%	VINCI	-0,88%	LVMH	-0,24%

The name of the instruments is displayed in green, red, or black depending on whether the transaction price is up, down, or unchanged.

Two buttons **Price** and **% var** allow you to indicate next to the name the transaction price or its percentage variation compared to the last closing price from the previous day.

The selection of the instrument list is made via a drop-down list located at the top right of the window, which offers a choice from one of the *personal lists* created by the user.

9. Real-Time Alerts

9.1. General Information

Axial Finance has a centralized real-time alert system. Programming an alert can be done either from a *chart window* or from a *price table*. All alerts programmed for various instruments are viewable and modifiable in a table located in the ***Trading Tools*** screen under the ***RT Alerts*** tab.

Alerts can be triggered based on:

i. the evolution of prices and volumes
ii. the crossing of *resistances* and *supports*
iii. responses to *signals* from the software library
iv. responses to *rules* from the software library

With each arrival of a transaction executed on the exchange, ***Axial Finance*** evaluates the programmed alerts and, if applicable, notifies you immediately.

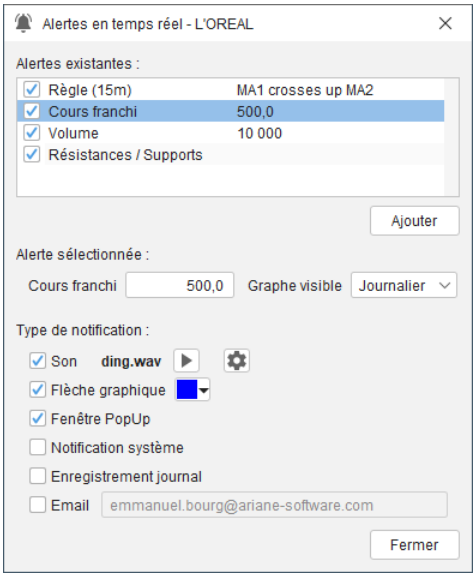
There is no limit to the number of real-time alerts activated simultaneously.

9.2. Programming Alerts

An alert can be programmed:

i. either from a *chart window* by clicking the ***Real-time alerts*** option in the ***View*** menu of the window.
ii. or from a *price table* by right-clicking on an instrument's row to open the context menu and then selecting the ***Real-time alerts*** option.

In both cases, the following window opens and displays all alerts already programmed for that instrument.



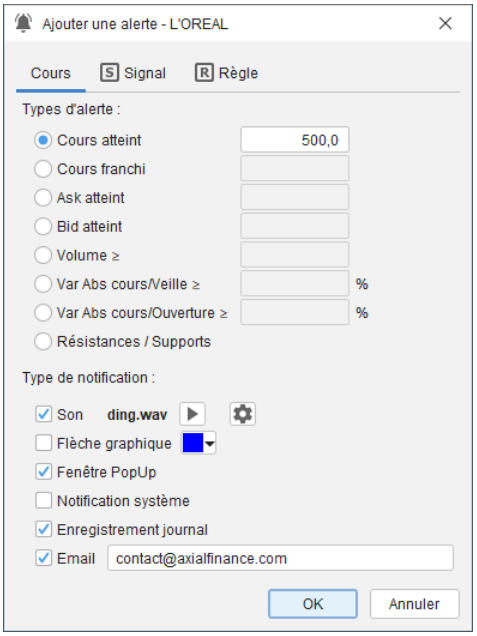
To delete a programmed alert, select it in the list and click on the icon.

To view the conditions of a programmed alert or to modify them, select it in the list to display them just below.

To deactivate a programmed alert without deleting it from the list, uncheck the corresponding box in the first column.

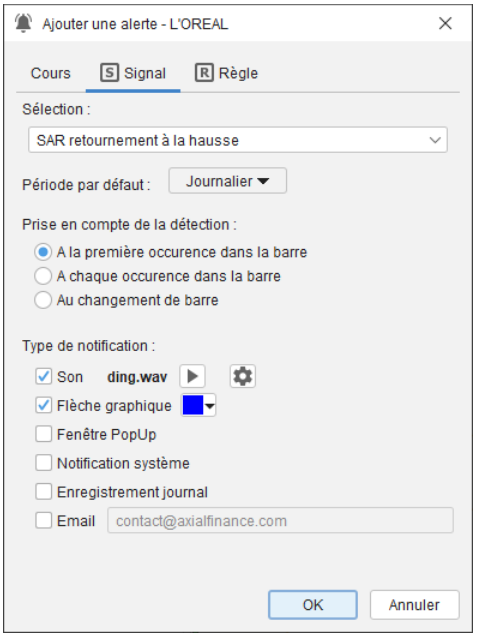
To add a new alert, click on the **Add** button to open the definition window below. This window contains three tabs: ***Price***, ***Signal***, and ***Rule***, depending on the type of alert being programmed.

The ***Price*** tab allows you to choose between the following types:



- ***Price Crossed***: the price crosses upward or downward through the specified price.
- ***Price Reached***: the price reaches upward or downward the specified price.
- ***Volume***: The volume exchanged since opening is greater than or equal to the specified amount.
- ***Abs. Change vs Prev Close***: The percentage change in price from yesterday's close is in absolute value greater than or equal to the specified percentage.
- ***Abs. Change vs Open***: The percentage change in price from opening is in absolute value greater than or equal to the specified percentage.
- ***Resistance - Support***: The price reaches one of the 6 *Resistance* or *Support* levels defined for the instrument.

The ***Signal*** or ***Rule*** tab allows you to choose the *signal* or *rule* from the software library, the price periodicity to use, and at what time to consider detection within the bar.



Choose the *signal* (or the *rule*) from the drop-down list.

Choose the price periodicity from the ***Default Period*** drop-down list:

(x)m	for (x) minutes
(x)h	for (x) hours
D	for daily
W	for weekly
M	for monthly

Choose the moment to take detection into account in the bar of the chosen periodicity:

- ***At the first occurrence within the bar***
- ***At each occurrence within the bar***
- ***At bar change***

9.3. Alert Notification

Each alert can be notified in 6 different ways by checking the corresponding box.

9.3.1. Sound

Through the emission of a sound chosen from a drop-down list. The list of sounds can be completed by the user by clicking on the button to the right of this list.

9.3.2. Popup Window

By opening a popup window, for example:

> **Important**
>
> When multiple alerts are activated on many instruments with a high probability of occurring frequently, the number of popup windows opening can quickly become very large. It is advisable to remain cautious when using this notification mode.

9.3.3. System Notification

A message is displayed for a few seconds in the system notification area before disappearing automatically.

9.3.4. Arrow in the Chart

When a price chart is open with the instrument being monitored, a vertical arrow appears at the last price with a label symbolizing the nature of the alert:

Pr when price is reached
Pc when price is crossed
V when volume is reached
%C when the % change of price relative to yesterday is reached
%O when the % change of price relative to opening is reached
S when an alert triggers on a *signal*
R when an alert triggers on a *rule*

Example during the crossing of a *support*:

Note

When at least one real-time alert is defined for the instrument in the chart, the icon is present at the bottom left of the chart.

When a ***Price Crossed*** or ***Price Reached*** alert is activated for the instrument, a horizontal line indicates this price with the same icon at its left extremity.

9.3.5. Logging to a Journal

The alert journal is available in the general menu ***Edit*** option ***Alert Journal***.

Example of logging:

9.3.6. Sending an Email

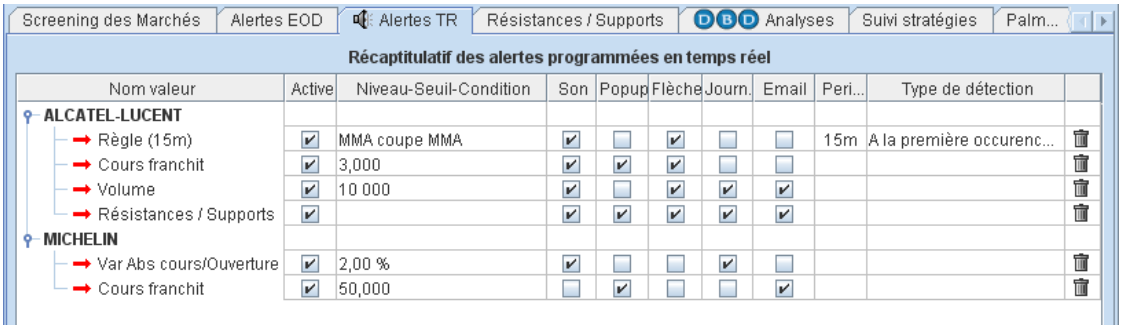
A specific email address can be defined for each alert. The last entered address is kept in memory and used for the alert notification unless it has been changed by the user.

Important

When multiple alerts are activated on many instruments with a high probability of occurring frequently, the number of emails sent can quickly become very large. It is advisable to remain cautious when using this notification mode.

9.4. Centralized Alert Table

A centralized table for all real-time alerts is available in the ***Trading Tools*** screen under the ***RT Alerts*** tab. It indicates, for each instrument, the programmed alerts with the corresponding details.



In this centralized table, you can modify, activate/deactivate alerts, and change the notification type by checking or unchecking the corresponding boxes. To permanently delete an alert, click on the icon.

To modify other conditions of an alert, double-click its name in the first column to open the programming window.

10. DDE Export of Real-Time Feed Data

Axial Finance allows exporting real-time feed data into Excel or any other application compatible with Microsoft DDE technology (***Microsoft Dynamic Data Exchange***), such as ***OpenOffice*** (Windows only).

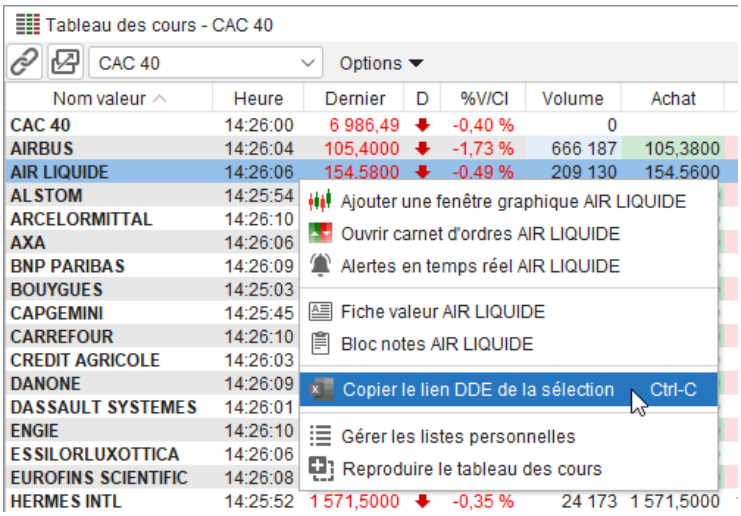
This feature is provided by default with the software and requires no additional programs or external plugins. It starts automatically as soon as the software detects an open Excel sheet.

Important

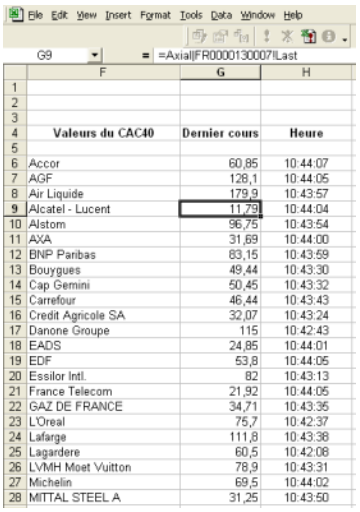
The Google Chrome browser may disrupt the DDE connection. We recommend closing Chrome before launching Axial Finance and Excel. Chrome can be restarted once the DDE link has been successfully established.

10.1. Creating an Excel sheet for exporting price table data

i. Display the list of instruments to be exported to Excel on the ***Price*** page.
ii. Open an Excel sheet.
iii. Select one or more cells from the *price table* to export to Excel and copy their content by simultaneously pressing **Ctrl**+**C**, or open the context menu and select the option ***Copy DDE link for this instrument***.



iv. Then, copy each data cell from the *price table* into the Excel sheet by selecting the destination cell and right-clicking to open the context menu and choosing the ***Paste*** option (or **Ctrl**+**V**).



In the Excel cell, a formula of the following type is entered to define the data to import:

=Axial|1_FR0000120321!Last

This string consists of three parts:

- **Axial**, which always appears at the beginning.
- The exchange identifier and the **ISIN code** of the instrument.
- The data code, **Last** in this example, for the last price.

The first and second parts are separated by the **|** character (vertical bar or "pipe"), and the second and third parts are separated by the **!** character (exclamation mark).

v. Alternatively, to steps iii and iv above, select a block of cells from the *price table* while holding down the **Ctrl** key and copy its content by simultaneously pressing **Ctrl**+**C**. Then, paste this block into Excel by pressing **Ctrl**+**V**.

vi. Open the *real-time feed*: the data will then update in Excel.

Important

Since the Excel sheet is open, when you stop and restart ***Axial Finance***, you must reactivate the DDE link in the Excel sheet. To do this, double-click a cell in the Excel sheet containing data, then click on an empty cell in Excel. The link will automatically re-establish itself.

10.2. Reopening an existing Excel sheet

With ***Axial Finance*** open, when you reopen an Excel sheet already configured with DDE links, Excel will display a dialog box asking:

> "The workbook you opened contains automatic links to information in another workbook.
> Do you want to update this workbook with changes made to the other workbook ?"

Click the **Yes** button to accept the update.

10.3. Exporting Order Book data to Excel

Each piece of order book data can be exported to Excel (see the list below). To insert one of these data points into an Excel sheet:

i. Click in the Excel cell that is to receive the data.
ii. In the Excel formula bar, type the following string of characters:
   - the **=** sign.
   - **Axial**.
   - the **|** character (vertical bar or "pipe").
   - the ISIN code of the instrument (12 characters) or the Axial code if the ISIN code is not defined.
   - the **!** character (exclamation mark).
   - the data code (see the list below).

   Example: **=Axial|1_FR0000120321!Level1BidPrice**
iii. Press the **Enter** key.

10.4. Data codes available for export from the feed

Data Code	Meaning
Name	Instrument name
Isin	ISIN code
Symbol, Mnemo	Mnemonic code
Exchange	Exchange
Country	Country code
Currency	Currency
Id	***Axial Finance*** identifier for the instrument
Last	Last price
Day	Today's date
Time	Time of the last price
Volume	Volume of the last transaction
CumulVolume	Session cumulative volume
MoneyFlow	Cumulative session volume in capital
Open	Session opening price
High	Session high
Low	Session low
Close	Previous day's close
Change	The change relative to yesterday's close
ChangePct	Percentage change relative to yesterday's close
PreOpenPrice	Pre-opening price (Euronext stocks)
PreOpenTime	Pre-opening price time
PreOpenPct	% change of pre-opening price relative to yesterday's close
OpenInterest	Open Interest (futures contracts)
Settlement	Settlement price (futures, options)

Expiry	Expiration date (futures, options)
BidPrice	Best bid price
BidVolume	Best bid volume
BidTime	Best bid time
AskPrice	Best ask price
AskVolume	Best ask volume
AskTime	Best ask time
LevelXBidPrice	Price of bid level X (where character X = 1, or 2 ... for the rank of the level)
LevelXBidVolume	Volume of bid level X
LevelXBidQty	Number of bids at level X
LevelXAskPrice	Price of ask level X
LevelXAskVolume	Volume of ask level X
LevelXAskQty	Number of asks at level X
Resistance1	Short-term resistance
Resistance2	Medium-term resistance
Resistance3	Long-term resistance
Support1	Short-term support
Support2	Medium-term support
Support3	Long-term support

Chapter 4. Trading Tools

1. Introduction

In the general menu, select the ***Trading Tools*** tab.

The purpose of the functions grouped in the ***Trading Tools*** module is to provide users with several tools to assist in decision-making.

These tools allow for:

1. ***Market Screening*** applied to "end of day" prices to search through a list of instruments for buy and sell *signals* derived from decision rules. Each *rule* consists of a set of conditions built from the *technical indicators* in the software's library.
2. Monitoring ***EOD Alerts*** for end-of-day price alerts and ***RT Alerts*** for real-time, programmed alerts within the software.
3. The global table of ***Resistance/Support*** levels for instruments to easily distinguish those near their levels.
4. ***Day By Day Analyses***, technical analyses updated daily and available in ***Axial Finance*** in real time as they are published.
5. ***Strategy Tracking*** to implement, day after day, the application of a *strategy* on a list of instruments and automatically obtain buy and sell orders, as well as order execution conditions and the evolution of the corresponding *portfolio*.
6. ***Rankings*** applied to "end of day" prices of instruments by market and over a given period, with instruments ranked by their increase, decrease, or proximity to the period's high or low.
7. Consulting the ***Price History*** as a table for instruments as present in the software's database.

2. General Information

2.1. Market Screening

In the ***Trading Tools*** module, select the ***Market Screening*** tab.

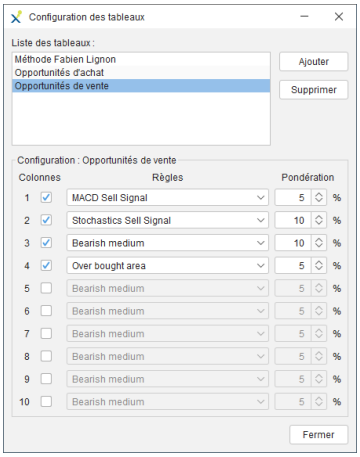
The purpose of *screening* is to search on a given date for all instruments in a market or a *personal list* that satisfy one or more *screening rules*. This screening function applies only to "end of day" prices. ***Axial Finance*** also allows for real-time screening (see the paragraph Screeners in the chapter regarding real time).

By definition, a *screening rule* is a set of conditions (see the paragraph Signals and Rules) based on *technical indicators*. ***Axial Finance*** also allows for easily designing such *rules* to perform *screening*.

After defining the *screening rules* and saving them to the library, they are assigned to a *screening table* to perform the search.

2.2. Creating a Screening Table

You can create as many *screening tables* as necessary, each *screening table* incorporating a maximum of ten *rules*. To create, modify, or cancel a *screening table*:



i. Click on the ⚙ button at the top of the ***Market Screening*** screen to open the dialog window shown here.

ii. To create a *screening table*, click **Add** and enter its name in the list.

iii. To cancel a *screening table*, select its name in ***List of tables*** and click **Delete**.

iv. To add or modify the *rules* assigned to the *screening table*, in the ***Configuration*** frame:

- Check a box under ***Columns*** to add a *rule* to the *screening table*.
- For each checked box, choose the name of the *rule* from the library in the dropdown list assigned to that column of the *screening table*.
- For each *rule*, optionally specify its relative weighting in the overall result compared to other *rules* to allow for weighted result calculation in case multiple *rules* yield a positive response.

2.3. Performing a Screening Operation

To perform a *screening* operation, define its parameters at the top of the ***Market Screening*** screen:

i. Select the *screening table* from the ***Tables*** dropdown.

ii. Choose a list of instruments from the ***Markets*** (the dropdown presents markets for the exchange selected in the instruments *reference list*) or a *personal list* by checking ***Perso***.

iii. Choose the date for the *screening*.

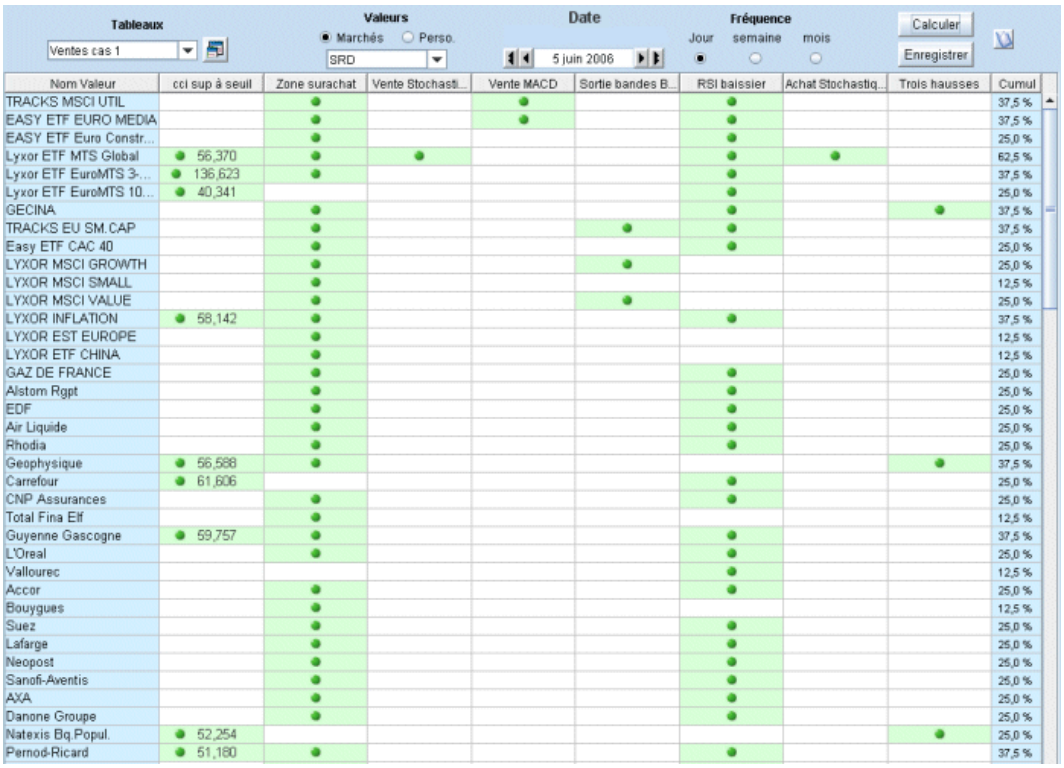
iv. Choose the "end of day" price frequency.

v. Launch the *screening* by clicking the **Calculate** button.

Important

On the *screening* date, ***Axial Finance*** checks if prices are present in memory and have sufficient history to perform the calculation of the *indicators* included in the *rules*. Otherwise, the screening report window will indicate *Missing prices for (instrument name)*.

Interpretation of the result:



Nom Valeur	cci sup à seuil	Zone surachat	Vente Stochasti...	Vente MACD	Sortie bandes B...	RSI baissier	Achat Stochastiq...	Trois hausses	Cumul
TRACKS MSCI UTIL		●		●		●			37,5 %
EASY ETF EURO MEDIA		●		●		●			37,5 %
EASY ETF Euro Constr...		●				●			25,0 %
Lyxor ETF MTS Global	● 56,370	●	●			●	●		62,5 %
Lyxor ETF EuroMTS 3-...	● 136,623	●				●			37,5 %
Lyxor ETF EuroMTS 10...	● 40,341					●			25,0 %
GECINA		●				●		●	37,5 %
TRACKS EU SM.CAP		●			●	●			37,5 %
Easy ETF CAC 40		●				●			25,0 %
LYXOR MSCI GROWTH		●			●				25,0 %
LYXOR MSCI SMALL		●							12,5 %
LYXOR MSCI VALUE		●			●				25,0 %
LYXOR INFLATION	● 58,142	●				●			37,5 %
LYXOR EST EUROPE		●							12,5 %
LYXOR ETF CHINA		●							12,5 %
GAZ DE FRANCE		●				●			25,0 %
Alstom Rgpt		●				●			25,0 %
EDF		●				●			25,0 %
Air Liquide		●				●			25,0 %
Rhodia		●				●			25,0 %
Geophysique	● 56,588	●						●	37,5 %
Carrefour	● 61,606					●			25,0 %
CNP Assurances		●				●			25,0 %
Total Fina Elf		●							12,5 %
Guyenne Gascogne	● 59,757	●				●			37,5 %
L'Oreal		●				●			25,0 %
Vallourec						●			12,5 %
Accor		●				●			25,0 %
Bouygues		●							12,5 %
Suez		●				●			25,0 %
Lafarge		●				●			25,0 %
Neopost		●				●			25,0 %
Sanofi-Aventis		●				●			25,0 %
AXA		●				●			25,0 %
Danone Groupe		●				●			25,0 %
Natexis Bq.Popul.	● 52,254							●	25,0 %
Pernod-Ricard	● 51,180	●				●			37,5 %

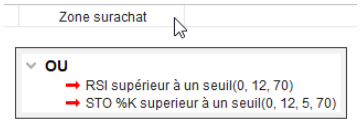
At the end of the calculation, the *screening table* displays instruments for which at least one of the *rules* gave a positive response, as well as in the last column on the right, the weighted cumulative result of the different *rules* to judge the relative importance of the result.

The table displays the result with a green dot ● and, depending on the case, with a numerical value for *rules* consisting of a single *signal* based on comparison with a numerical threshold, for example:

- 12-day RSI greater than 70
- 10-day Trend (short term) is positive and greater than 0.5% per day

In the *screening table*, you can perform the following operations:

- Click on a column header to sort instruments in ascending or descending order according to the result of a *rule*.
- Double-click on an instrument name to automatically switch to the ***Market Tracking*** area and display its prices in a *chart window*.
- To consult the details of a *rule* in the *screening table*, right-click on the column header of the *rule*. A window shows the composition of this *rule* with its parameters:



2.4. Creating a personal list with the screening result

Click on the **Save** button at the top right of the ***Market Screening*** screen and enter the name of this list to automatically add it to the *personal lists*.

3. Signals and Rules

3.1. Predefined Signals in the Library

To define the *rules* used in *screening*, ***Axial Finance*** provides a library of predefined and parameterizable *signals*.

To consult the list of available *signals*, in the general menu ***Trading System***, choose the option ***Edit Screening Rules***. The rule editing window that opens displays the list of *signals* from the library on its right side.

Important

In principle, a *signal* is evaluated based on the prices of the chart's periodicity. For example, a *signal* used in a *rule* applied to a 15-minute chart will be evaluated with that same periodicity. This periodicity is called the *default periodicity*. Thus, in a *rule*, all *signals* will a priori be evaluated with the *default periodicity*.

The **Maestro** version allows working in ***multi-timeframes***. In this mode, each *signal* can be evaluated in its own periodicity set by the user. Thus, a *rule* could contain, for example, *signals* in 15-minute periodicity and others on a daily basis, regardless of the default periodicity.

3.1.1. List of Predefined Signals

Note

The following list is not exhaustive, as the library is updated as the software evolves.

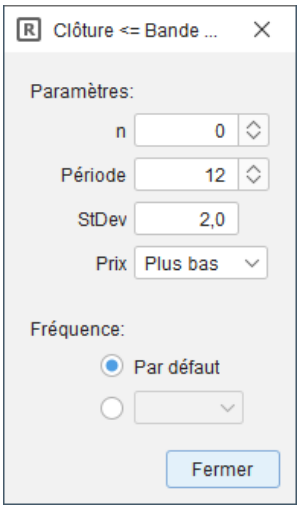
Signals based on prices	• Closing up • Closing down • Close below Open • Close above Open • Close below Low • Close above Low • Close above High • Close below High • Opening up • Opening down • Open below Low • Open above Low • Open above High • Open below High • Pattern Narrowest Range
Signals based on volume	• Volume is greater than a ratio of the average volume of the period
Signals based on Simple Moving Average	• Close below Simple Moving Average • Close above Simple Moving Average • Close crosses below the Simple Moving Average • Close crosses above the Simple Moving Average

	• SMA 1 crosses below SMA 2
	• SMA 1 crosses above SMA 2
Signals based on Bollinger Bands	• Close below lower Bollinger Band
	• Close above upper Bollinger Band
Signals based on the Relative Strength Index	• RSI below a threshold
	• RSI above a threshold
	• RSI crosses below a threshold
	• RSI crosses above a threshold
	• RSI rising
	• RSI falling
Signals based on DMI	• +DX crosses above -DX
	• -DX crosses above +DX
	• ADX above a threshold
	• ADX below a threshold
Signals based on Momentum	• Momentum crosses below the zero axis
	• Momentum crosses above the zero axis
Signals based on MACD	• MACD Oscillator crosses below its trigger line
	• MACD Oscillator crosses above its trigger line
	• MACD Oscillator is below its trigger line
	• MACD Oscillator is above its trigger line
Signals based on Stochastics	• Stochastics %K is below a threshold
	• Stochastics %K is above a threshold
	• STO %K crosses below STO %D
	• STO %K crosses above STO %D
Signals based on Commodity Channel Index	• CCI is below a threshold
	• CCI is above a threshold
Signals based on Price Rate Of Change	• P-ROC crosses below the zero axis
	• P-ROC crosses above the zero axis
Signals based on Trend Ratio	• Trend above a threshold
	• Trend below a threshold
Signals based on Williams %R	• Williams %R above a threshold
	• Williams %R below a threshold
Signals based on Japanese Candlestick patterns	• Bullish or Bearish Candlesticks
	• Bullish or Bearish Engulfings
	• Bullish or Bearish Engulfings confirmed
	• Bullish or Bearish Haramis
	• Bullish or Bearish Haramis confirmed
	• Morning Star or Evening Star
	• Gravestone Doji or Piercing Line
	• Hanging Man, Hammer, or Inverted Hammer
	• Doji
	• Three Black Crows or Three White Soldiers
	• Bullish or Bearish Kickers

	• Bullish or Bearish Counter Attack
Signals based on Resistance and Support levels	• Price near a Support • Price near a Resistance • Price crosses below a Support • Price crosses above a Resistance
Signals based on Fundamental Analysis ratios	• EPS/Price greater than a threshold (%) • Market Cap/Revenue greater than a threshold • Market Cap/Revenue less than a threshold • Price/Book value greater than a threshold • Price/Book value less than a threshold • EBIT/Revenue greater than a threshold (%) • Net Debt/Equity less than a threshold (%) • EPS Growth/Revenue greater than a threshold (%) • EPS Growth/Revenue less than a threshold (%) • PER greater than a threshold • PER less than a threshold • Net Reserves/Revenue greater than a threshold (%) • Net Reserves/Equity greater than a threshold (%) • Enterprise Value/Revenue less than a threshold • Enterprise Value/Revenue greater than a threshold

3.1.2. Parameterizing a signal in the rule

Each *signal* has one or more parameters originally defined with default values. When inserting a *signal* into a *rule* or testing the *signal* on a price chart, the precise parameter values are chosen.



For example, this signal contains 4 parameters: ***n***, ***Period***, ***StDev*** and ***Type***

and additionally, in the case of the **Maestro** version, an extra parameter to define a ***specific periodicity*** if needed, which is different from the *default periodicity*.

The parameter ***n***, which is always present in principle, serves to define the evaluation *bar* of the *signal* with the following convention:

- **0** for the current *bar*
- **1** for the previous *bar*
- **2** for two *bars* before the current *bar*
- etc ...

The use of this parameter **n** allows for a time offset in number of bars of a signal relative to another.

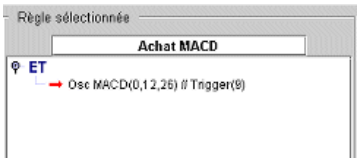
3.2. Creating and editing screening rules

3.2.1. General Information

A *rule* is defined as a logical combination (in the sense of Boolean logic) of *signals* which on a given date are in a TRUE or FALSE state.

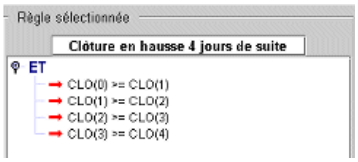
Axial Finance is equipped with a graphical system allowing for very simple definition of even the most complex *rules* without requiring specific programming language knowledge.

A few simple examples of graphical representation of *rules*:



Rule composed of a single *signal*

Rule composed of two *signals* where at least one must be TRUE (Boolean OR logic)



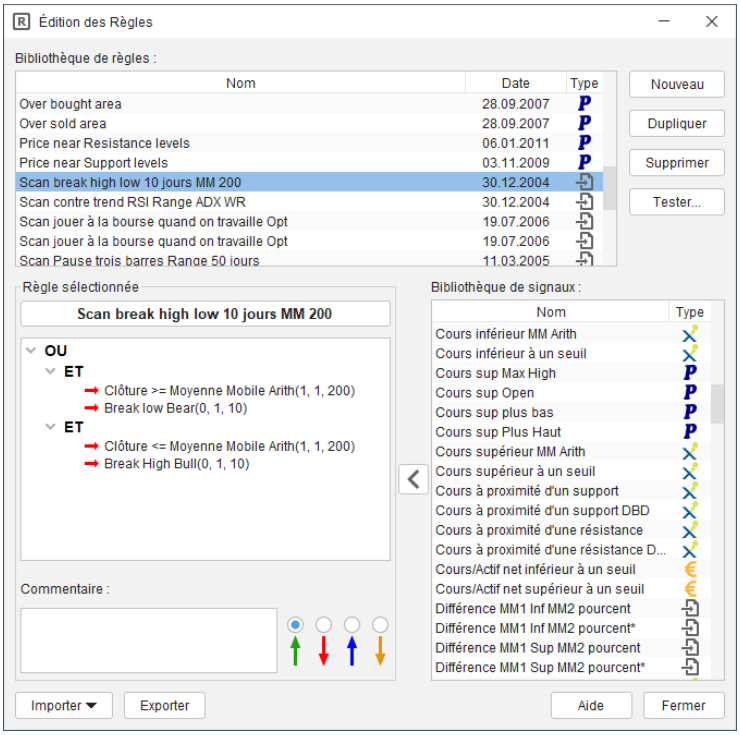
Rule composed of four *signals* which must all be TRUE (Boolean AND logic)

3.2.2. Creating, copying or canceling a rule

The *rules* are listed in a library which is accessed via the general menu ***Trading System***, option ***Edit Screening Rules***.

The rule editing window presents:

- in its upper part, the list of *rules*
- on the right, the list of available *signals*
- in the center, the ***Selected Rule*** frame contains the composition of the selected *rule* with its *signals*



To add a new *rule* to the library:

i. Click on the **New** button. The ***Selected Rule*** frame then presents a blank area to enter the name of the *rule* and define it graphically.
ii. Enter the name of the *rule* by replacing the default label "New".
iii. Construct the *rule* graphically following the procedure described in the next paragraph.

To copy a *rule*, select it from the list and click on the **Copy** button.

To cancel a *rule*, select it from the list and click on the **Cancel** button.

3.2.3. Adding, changing or canceling a signal in a rule

Each *rule* must start with an initial condition called the *root condition*. By default, this condition is an ET (AND in Boolean logic).

To replace the *root condition* AND with an OR, right-click on the ET icon of this *root condition* to open the context menu, and choose the option ***Replace AND with OR***.

Proceed inversely with ***Replace OR with AND***.

To add a *signal* to the *root condition* or to any other *condition* ET or *condition* OU of the *rule*:

i. Right-click on the condition icon, then open the context menu and choose the option ***Add signal***. A red horizontal arrow ➡ ... prefiguring the place of the *signal* is inserted below.
ii. Click on this red arrow to select it.
iii. To then insert a *signal* from the library, two methods are available:
    i. Select the *signal* from the list and click on the <
    ii. or drag and drop the *signal* by pressing the left mouse button, dragging it while holding the button, and releasing it over the red arrow.

To replace a *signal* in the *rule* with another *signal* from the library:

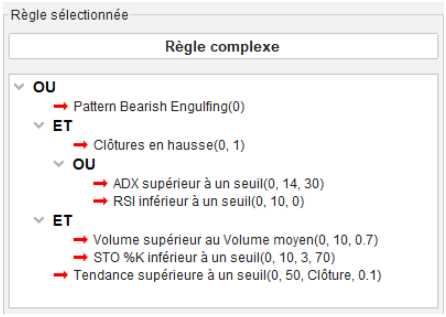
i. Select the *signal* to be replaced by clicking on it in the graphical representation of the *rule*.
ii. Then, two methods are available:
    A. Select the new *signal* from the library and click on the <
    B. or drag and drop the *signal* by pressing the left mouse button, dragging it while holding the button, and dropping the pointer over the arrow in the graphical representation.

To delete a condition or a *signal* in the *rule*:

i. Click on the image of that condition or *signal* and then open the context menu by right-clicking it.
ii. Choose the option ***Cancel***.

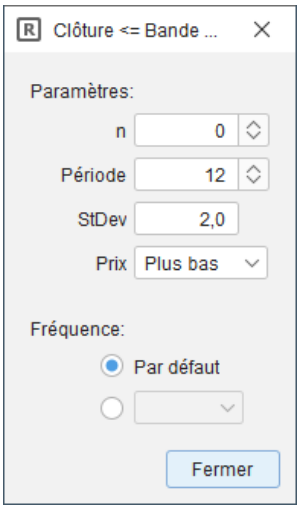
Deleting a condition also deletes all *signals* and other conditions included in that condition.

Example of constructing a complex *rule*:



3.2.4. Parameterizing a signal within the rule

The *signal* placed in the *rule* is initially parameterized with its default values.



i. To define different parameters, double-click on this *signal* to open the input window shown here.
ii. This window presents all the signal's parameters. Modify the parameter values in the corresponding fields.

3.2.5. Multi-timeframe functionality XM

The **Maestro** version of ***Axial Finance*** allows for the operation of *rules* in **multi-timeframes**, that is, with *signals* determined at specific periodicities different from the *default periodicity* of the chart or the screener.

For each *signal* in the *rule*, the parameterization window above allows fixing a specific periodicity:

(x)m	for (x) minutes
(x)h	for (x) hours
D	for daily
W	for weekly
M	for monthly

When a specific periodicity has been fixed for a *signal*, this periodicity is written at the beginning of its parameter list as follows:

Example of the label for a 15-minute periodicity: *Closing up(**15m**, 1, 2)*

3.3. Applying a rule to a price chart

To verify the result of a *rule* in a price chart:

i. Select the *rule* from the rule editing library, verify that the parameterization of the *signals* is correct, and then click on the **Test** button.

ii. ***Axial Finance*** displays the result of the *rule* in a *chart window* in the ***Market Tracking*** area (the window selected in case several windows are open). Each detection is marked by an arrow vertically aligned with the price. The color of the arrow is the one chosen in the *rule* editing window.

4. Strategy Tracking XE

4.1. General Information

In the ***Trading Tools*** module, select the ***Strategy Tracking*** tab.

The ***Strategy Tracking*** allows for the real application of a trading *strategy* day after day and tracking the evolution of positions in the *portfolio*.

The following operations are performed:

1. Detection of position opening *signals* for the applied *strategy*
2. Analysis of these *signals* to decide on placing an order with the broker, providing price information for purchase, validity, and potentially the level of the *trailing stop* calculated by the software
3. Recording the opening of the position in the software *portfolio* when the order placed with the broker has been executed
4. Portfolio tracking: profits and performance
5. Detection of position closing *signals*
6. Analysis of these *signals* to decide on placing the order with the broker or knowing if a programmed stop has been executed by the broker
7. Recording the closing of the position in the software *portfolio* when it has been executed by the broker

The *portfolio* used is one of the *portfolios* from the ***Portfolio Management*** module. If needed, creating a new *portfolio* must be done from this module.

The applied *strategy* is one of the *strategies* in the library (see the paragraph Creating Strategies).

4.2. Defining tracking conditions

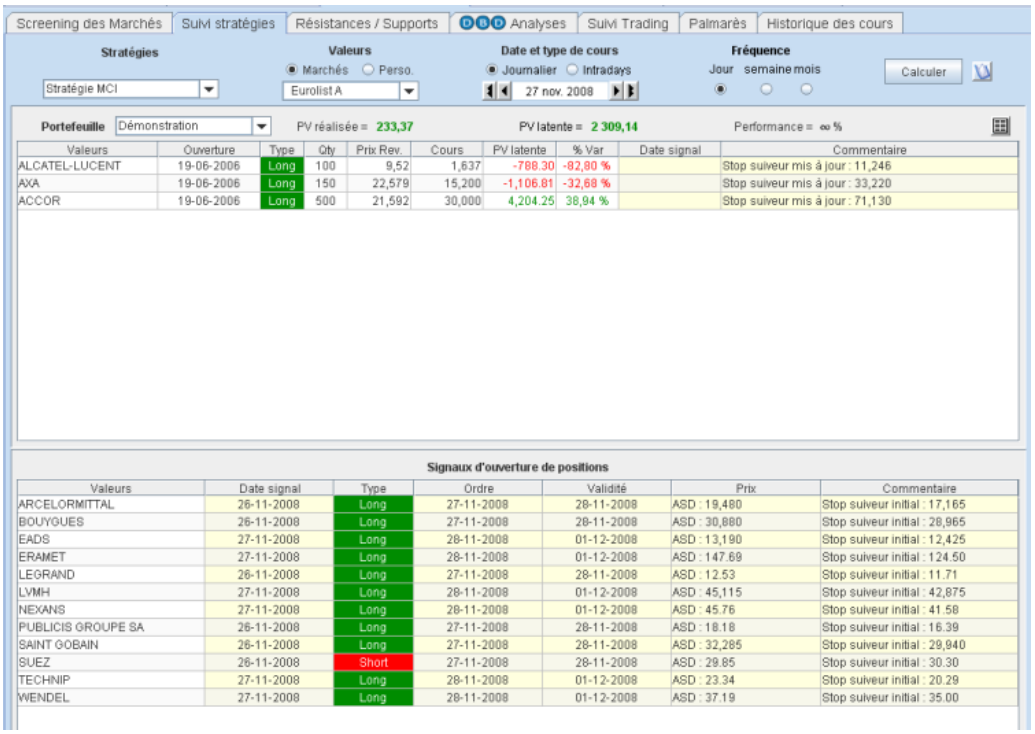
To track a *strategy*, you must first define the parameters at the top of the ***Strategy Tracking*** screen:

i. Select the *portfolio* from the ***Portfolio*** dropdown list.
ii. Select the *strategy* from the ***Strategies*** dropdown. This list presents the various *strategies* present in the software's library.
iii. Choose a list of instruments for which position opening *signals* will be searched, from the ***Markets*** (the dropdown presents markets for the exchange selected in the instruments *reference list*) or a *personal list* by checking ***Perso***.
iv. Choose the price type ***Daily*** or ***Intraday*** and the ***Frequency*** of application for the *strategy*.
v. Choose the ***Date*** of the day and optionally the time. ***Axial Finance*** displays the current date by default. Use the left or right arrows to open the calendar.

4.3. Searching for opening signals

Since prices are up to date in the software for the selected date, click on the **Calculate** button to launch the search for opening *signals* as well as the update of the *portfolio* status.

The ***Strategy Tracking*** screen displays the result of the opening signal search in its lower part:



Valeurs	Ouverture	Type	Qty	Prix Rev.	Cours	PV latente	% Var	Date signal	Commentaire
ALCATEL-LUCENT	19-06-2006	Long	100	9,52	1,637	-788.30	-82,80 %		Stop suiveur mis à jour : 11,246
AXA	19-06-2006	Long	150	22,579	15,200	-1,106.81	-32,68 %		Stop suiveur mis à jour : 33,220
ACCOR	19-06-2006	Long	500	21,592	30,000	4,204.25	38,94 %		Stop suiveur mis à jour : 71,130

Valeurs	Date signal	Type	Ordre	Validité	Prix	Commentaire
ARCELORMITTAL	26-11-2008	Long	27-11-2008	28-11-2008	ASD : 19,480	Stop suiveur initial : 17,165
BOUYGUES	26-11-2008	Long	27-11-2008	28-11-2008	ASD : 30,880	Stop suiveur initial : 28,965
EADS	27-11-2008	Long	28-11-2008	01-12-2008	ASD : 13,190	Stop suiveur initial : 12,425
ERAMET	27-11-2008	Long	28-11-2008	01-12-2008	ASD : 147.69	Stop suiveur initial : 124.50
LEGRAND	26-11-2008	Long	27-11-2008	28-11-2008	ASD : 12.53	Stop suiveur initial : 11.71
LVMH	27-11-2008	Long	28-11-2008	01-12-2008	ASD : 45,115	Stop suiveur initial : 42,875
NEXANS	27-11-2008	Long	28-11-2008	01-12-2008	ASD : 45.76	Stop suiveur initial : 41.58
PUBLICIS GROUPE SA	26-11-2008	Long	27-11-2008	28-11-2008	ASD : 18.18	Stop suiveur initial : 16.39
SAINT GOBAIN	26-11-2008	Long	27-11-2008	28-11-2008	ASD : 32,285	Stop suiveur initial : 29,940
SUEZ	26-11-2008	Short	27-11-2008	28-11-2008	ASD : 29.85	Stop suiveur initial : 30.30
TECHNIP	27-11-2008	Long	28-11-2008	01-12-2008	ASD : 23.34	Stop suiveur initial : 20.29
WENDEL	27-11-2008	Long	28-11-2008	01-12-2008	ASD : 37.19	Stop suiveur initial : 35.00

For each instrument presenting an opening *signal* on the selected date, ***Axial Finance*** indicates:

i. The date of the *signal* (or, if applicable, the date of the first *signal* when it repeats over several consecutive *bars*)
ii. The nature of the order: Long or Short
iii. The **order date** to be placed with the broker, taking into account the execution delay set in the *strategy*
iv. The **order validity period** for execution defined in the *strategy*
v. The **order price** in the case of a **market limit order** or **stop-loss trigger order**
vi. If applicable, the initial **trailing stop** level

> **Important**
>
> It is up to the user to decide which instruments from the list they will actually place an order for with the broker.

4.4. Tracking open positions

When an order placed with the broker is executed, the corresponding position is then opened in the software. To do this, double-click on the instrument line in the opening *signals* table to open the entry window. This window is identical to the one described in the paragraph Buy Orders of the ***Portfolio Management*** chapter.

Once opened, the position is added to the upper part of ***Strategy Tracking***.

For each open position, ***Axial Finance*** indicates:

1. The **opening date** of the position
2. The nature of the position: Long or Short
3. The **quantity of shares**

4. The average **cost price**
5. The **last price**
6. The **unrealized profit/loss**
7. The **percentage gain or loss** of the position
8. The date of the *signal* for closing calculated by the *strategy*
9. A **comment** which, in the case of a *strategy* with a *trailing stop*, specifies whether the previous level should be updated at the broker or remains unchanged

When the closing order placed with the broker is executed, the position is closed in the software by double-clicking on the *portfolio* line to open the entry window.

Above the list of positions in the *portfolio*, ***Axial Finance*** indicates the realized and unrealized profits as well as the performance since the creation of the *portfolio*.

The transaction journal can be opened directly by clicking on the button to the right of the performance display.

5. Resistance and Support

5.1. General Information

Axial Finance allows up to three *resistance levels* and three *support levels* to be kept in memory for each instrument.

These levels can be used in several cases:

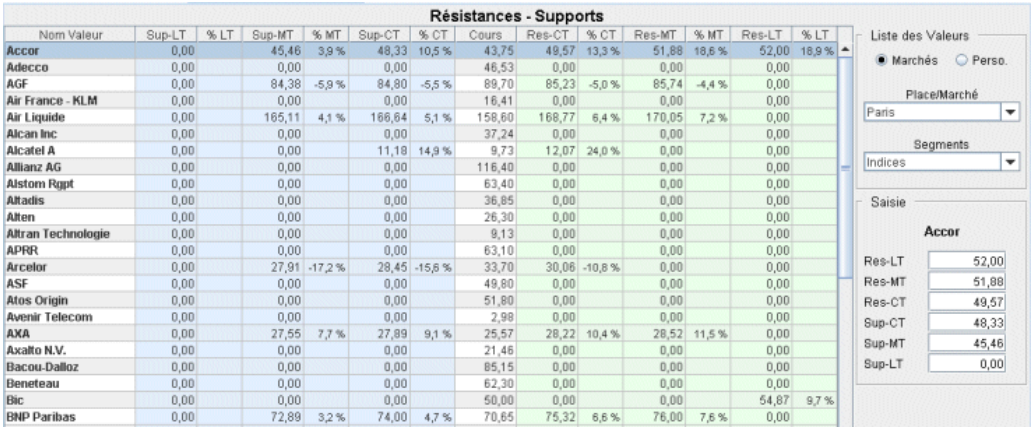
1. Display in price charts in the ***Market Tracking*** area
2. Display in the ***Portfolio Management*** chart
3. Implementation of *signals*, *rules*, and *strategies* containing *indicators* based on these levels

In the ***Trading Tools*** module, under the ***Resistance/Support*** tab, a table displays all the levels defined by the user for instruments in a market or a *personal list*.

5.2. Updating Resistance and Support Levels

The update of *resistance and support levels* can be performed from several parts of the software:

5.2.1. From the Resistance/Support tab of the Trading Tools module



After selecting the exchange and market in the frame on the right to display a list of instruments, select an instrument from the table and enter the different levels into the ***Entry*** frame.

5.2.2. From a price chart in the Market Tracking area

To display the levels in the chart:

i. Click on the function button of the *chart window* or choose the ***Define Resistance-Support*** option from the ***Display*** menu.
ii. Check the ***Display*** box in the dialog window.
iii. Enter the levels into the ***Res-LT***, ***Res-MT***, ***Res-CT***, ***Sup-CT***, ***Sup-MT***, and ***Sup-LT*** fields.

To modify the price of a level, it is not necessary to reopen the entry window. Select this level with the mouse and drag vertically up or down while holding the left mouse button, then release the mouse button when the price displayed on the vertical scale is the desired one.

To facilitate level selection, when dragging vertically, the price varies according to a tick size determined as follows:

1. For a price < 2, the variation step is 0.01 (two decimals)
2. For a price >= 2 and < 100, the variation step is 0.1 (one decimal)
3. For a price >= 100 and < 1000, the variation step is 1
4. For a price >= 1000, the variation step is 10

To obtain continuous variation of the level regardless of the price magnitude, press the **Esc** key on the keyboard while dragging vertically.

To modify the style (thickness and dashed line) of the levels, click on the button Indicateurs of the *chart window*, go to the ***Main Chart*** tab, choose the *indicator* **Resistance-Support** which is present in the

Selection frame, and modify the ***Thickness*** and ***Dashed line*** parameters (the color of the levels cannot be changed).

For each level, ***Axial Finance*** displays the percentage deviation of this level relative to the last price.

5.2.3. From the chart in the Portfolio Management module

See paragraph Entering and modifying Target, Resistance, and Support levels of the ***Portfolio Management*** chapter.

5.3. Level Indicators XE

In the ***Axial Finance*** indicator library, two preprogrammed *indicators* allow specifying a level of *Resistance* or *Support*:

- *Indicator* **LVLR(n, Rank)** for a Resistance
- *Indicator* **LVLS(n, Rank)** for a Support

where the parameter **Rank** takes one of three values: 1 (for CT), 2 (for MT), or 3 (for LT) to define the type of resistance or support.

Example: To define a Res-LT level, use the *indicator* **LVLR(0, 3)**.

5.4. Use in a rule or a strategy XE

Four *signals* preprogrammed in the ***Axial Finance*** library can be used for insertion into a *rule*:

- *Signal* **Price near a Support** with three parameters: n, Rank, and Threshold (as a percentage) defining the proximity of the closing price to the Support.
- *Signal* **Price near a Resistance** with three parameters: n, Rank, and Threshold (as a percentage) defining the proximity of the closing price to the Resistance.
- *Signal* **Price crosses below a Support** with two parameters: n and Rank.
- *Signal* **Price crosses above a Resistance** with two parameters: n and Rank.

> **Note**
>
> The two *indicators* for levels LVLR and LVLS can be used to create custom *signals* in addition to those preprogrammed in the library.

6. Day By Day Analyses

6.1. General Information

Analyses performed by the ***Day By Day*** firm are available in real time in ***Axial Finance***. These analyses cover the main European instruments and are updated daily. They are automatically transmitted to the software and can be consulted at any time.

Each analysis includes the following information:

1. The *resistance and support levels*.

2. Key chart patterns: channels, triangles, head and shoulders, gap, ...
3. Short-term and medium-term opinion
4. The target price and the invalidation level
5. The bullish and bearish reversal thresholds
6. The short-term forecast and the medium-term context

This data is presented partly in the price charts of the ***Market Tracking*** area, and partly in a global table in the ***Trading Tools*** module under the ***DBD Analyses*** tab.

6.2. Display in price charts

To display the analysis on the price chart, open the ***Display*** menu and select ***Day By Day*** then ***Show graphic analysis***.

By selecting ***Show recommendation*** in the ***Day By Day*** menu, a window opens with the details of the analysis (see an example of this window in the following paragraph).

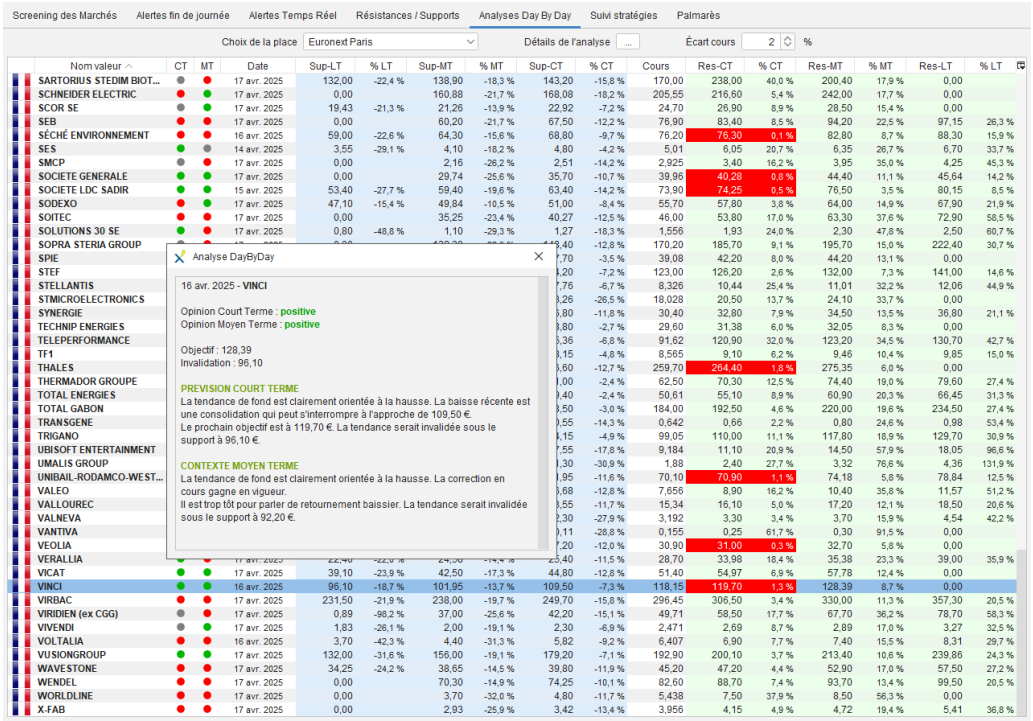
In the chart, the *resistance and support levels*, chart patterns, and comments from the ***Day By Day*** analysis cannot be modified by the user.

The *resistance and support levels* from the ***Day By Day*** analysis are represented differently from those defined by the user. The former have a small colored rectangle at their left end displaying the level's price.

Resistance and support levels considered major by ***Day By Day*** are drawn with a double line thickness.

6.3. Display in a global table

In ***Trading Tools***, under the ***Day By Day Analyses*** tab, a table presents all the *resistance and support levels* for available instruments for an exchange.



This table includes the following columns:

1. A flag reminding of the country of the instrument's exchange
2. The name of the instrument
3. Short-term opinion, summarized into three possibilities: positive (green dot), negative (red dot), or neutral (blue dot)
4. Medium-term opinion, summarized into three possibilities: positive (green dot), negative (red dot), or neutral (blue dot)
5. Support level 3 (or LT)
6. The percentage deviation of the previous level from the last price
7. Support level 2 (or MT)
8. The percentage deviation of the previous level from the last price
9. Support level 1 (or CT)
10. The percentage deviation of the previous level from the last price
11. The last known market price for the instrument
12. Resistance level 1 (or CT)
13. The percentage deviation of the previous level from the last price
14. Resistance level 2 (or MT)
15. The percentage deviation of the previous level from the last price
16. Resistance level 3 (or LT)
17. The percentage deviation of the previous level from the last price

By double-clicking on an instrument in the table, ***Axial Finance*** directly displays its chart in the ***Market Tracking*** area.

A percentage can be defined to identify levels whose deviation from the last price is less than that percentage. In this case, the corresponding cells in the table appear with a red background.

7. End Of Day Alerts

7.1. General Information

Axial Finance gathers in a single table the report of all alerts that can be programmed in the software for a list of instruments. These alerts are those detected on a given date relative to "end of day" prices. They concern:

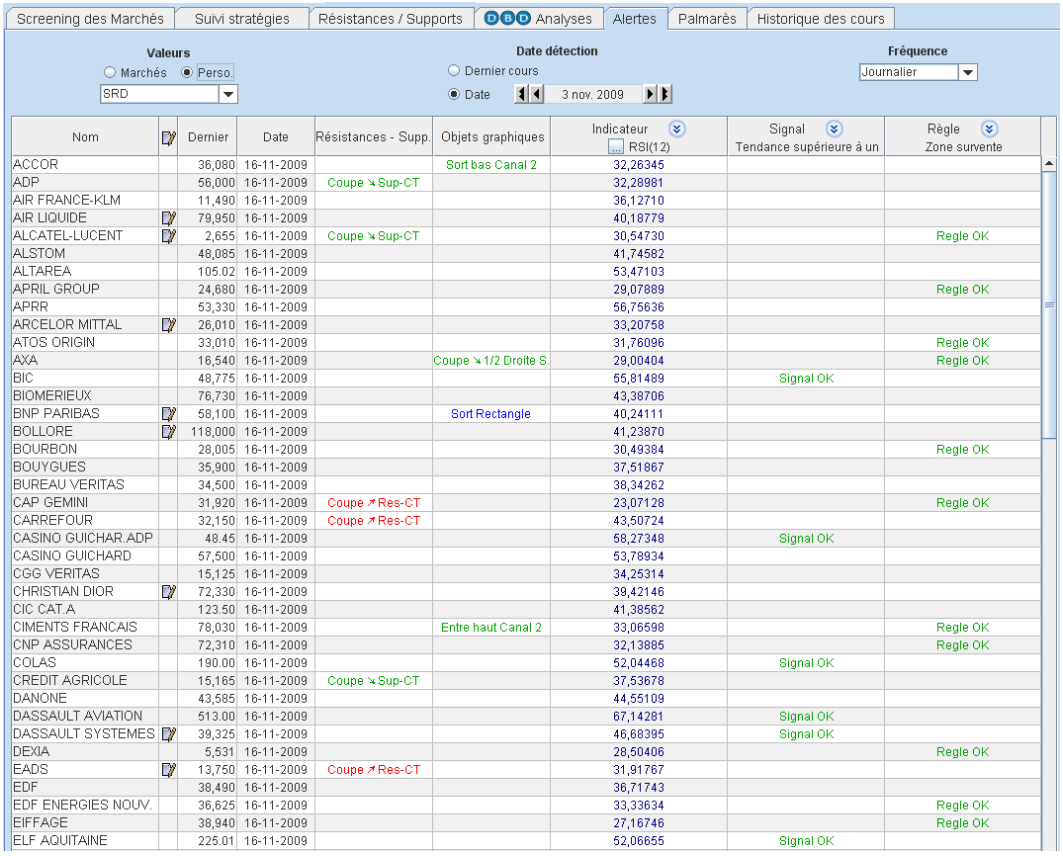
1. the crossing of horizontal *Resistance* and *Support* levels defined by the user
2. the crossing of oblique *Resistance and Supports* drawn in price charts
3. entry into and exit from *trend channels*, rectangular and triangular *zones* drawn in price charts
4. the detection of a *Signal*
5. the detection of a *Rule*

Furthermore, this table also allows displaying the value of a technical indicator chosen from the software's library.

The alerts table is automatically updated after each update of "end of day" prices or after any change in the software regarding *Resistance and Supports*, *trend channels*, etc. ... as well as *Signals* and *Rules* in the library.

In the ***Trading Tools*** module, select the ***Alerts*** tab to display the alerts table.

7.2. Presentation of the Alerts Table



Nom	Dernier	Date	Résistances - Supp.	Objets graphiques	Indicateur RSI(12)	Signal Tendance supérieure à un	Règle Zone survente
ACCOR	36,080	16-11-2009		Sort bas Canal 2	32,26345		
ADP	56,000	16-11-2009	Coupe ↘ Sup-CT		32,28981		
AIR FRANCE-KLM	11,490	16-11-2009			36,12710		
AIR LIQUIDE	79,950	16-11-2009			40,18779		
ALCATEL-LUCENT	2,655	16-11-2009	Coupe ↘ Sup-CT		30,54730		Regle OK
ALSTOM	48,085	16-11-2009			41,74582		
ALTAREA	105.02	16-11-2009			53,47103		
APRIL GROUP	24,680	16-11-2009			29,07889		Regle OK
APRR	53,330	16-11-2009			56,75636		
ARCELOR MITTAL	26,010	16-11-2009			33,20758		
ATOS ORIGIN	33,010	16-11-2009			31,76096		Regle OK
AXA	16,540	16-11-2009		Coupe ↘ 1/2 Droite S.	29,00404		Regle OK
BIC	48,775	16-11-2009			55,81489	Signal OK	
BIOMERIEUX	76,730	16-11-2009			43,38706		
BNP PARIBAS	58,100	16-11-2009		Sort Rectangle	40,24111		
BOLLORE	118,000	16-11-2009			41,23870		
BOURBON	28,005	16-11-2009			30,49384		Regle OK
BOUYGUES	35,900	16-11-2009			37,51867		
BUREAU VERITAS	34,500	16-11-2009			38,34262		
CAP GEMINI	31,920	16-11-2009	Coupe ↗ Res-CT		23,07128		Regle OK
CARREFOUR	32,150	16-11-2009	Coupe ↗ Res-CT		43,50724		
CASINO GUICHAR.ADP	48.45	16-11-2009			58,27348	Signal OK	
CASINO GUICHARD	57,500	16-11-2009			53,78934		
CGG VERITAS	15,125	16-11-2009			34,25314		
CHRISTIAN DIOR	72,330	16-11-2009			39,42146		
CIC CAT.A	123.50	16-11-2009			41,38562		
CIMENTS FRANCAIS	78,030	16-11-2009		Entre haut Canal 2	33,06598		Regle OK
CNP ASSURANCES	72,310	16-11-2009			32,13885		Regle OK
COLAS	190.00	16-11-2009			52,04468	Signal OK	
CREDIT AGRICOLE	15,165	16-11-2009	Coupe ↘ Sup-CT		37,53678		
DANONE	43,585	16-11-2009			44,55109		
DASSAULT AVIATION	513.00	16-11-2009			67,14281	Signal OK	
DASSAULT SYSTEMES	39,325	16-11-2009			46,68395	Signal OK	
DEXIA	5,531	16-11-2009			28,50406		Regle OK
EADS	13,750	16-11-2009	Coupe ↗ Res-CT		31,91767		
EDF	38,490	16-11-2009			36,71743		
EDF ENERGIES NOUV.	36,625	16-11-2009			33,33634		Regle OK
EIFFAGE	38,940	16-11-2009			27,16746		Regle OK
ELF AQUITAINE	225.01	16-11-2009			52,06655	Signal OK	

In its upper part, this table allows you to choose:

1. The list of instruments being tracked
2. The detection date for the alerts, which can be either the latest prices present in software memory or a date defined by the user

3. The "end of day" price frequency (Daily, Weekly, or Monthly)

It presents the following columns:

1. The name of the instrument
2. to open the instrument's notepad
3. The last known price and its corresponding date
4. Alerts on horizontal *Resistance and Support*
5. Alerts on *Graphic Objects*
6. The value of an *Indicator* at the detection date
7. Alerts for a *Signal*
8. Alerts for a *Rule*

7.3. Alerts on Horizontal Resistance and Support

The horizontal *Resistances and Supports* used are those defined by the user in the price charts or in the ***Resistance/Support*** screen of the ***Trading Tools*** module (see the previous paragraph Resistances and Supports).

In the table column, depending on whether a resistance was crossed upwards or a support downwards, one of the following labels is written:

- Crosses ↗ RES-CT (or Res-MT or Res-LT)
- Crosses ↗ Sup-CT (or Sup-MT or Sup-LT)

This crossing is relative to the price evolution between two dates: the date preceding the detection date and the detection date itself.

7.4. Alerts on Graphic Objects

Axial Finance allows detecting alerts relative to the following tracings performed by the user in "end of day" price charts, also called *Graphic Objects*:

1. Horizontal line
2. Oblique straight line
3. Trend channel
4. Rectangle
5. Triangle

7.4.1. Activating an alert in the chart

Once the *Graphic Object* is drawn, open its context menu by right-clicking on one of the reference points of the object, and choose as appropriate:

1. Activate RES alert or Activate SUP alert in the case of a horizontal or oblique straight line. This allows choosing between crossing a *Support* (SUP) downwards or crossing a *Resistance* (RES) upwards.
2. Activate IN alert or Activate OUT alert in the case of a Channel, Rectangle, or Triangle. This allows choosing between entering (IN) or exiting (OUT) one of these *Graphic Objects*.

Example of activated alerts:

To deactivate the alert, open its context menu by right-clicking on one of the reference points of the object, and choose the deactivation option present there.

7.4.2. Displaying the alert in the table

In the *Graphic Objects* column, depending on whether an upward or downward crossing or entry/exit was detected, one of the following labels is written:

- Crosses ↗ Horizontal or Crosses ↘ Horizontal
- Crosses ↗ 1/2 Upper Line or Crosses ↘ 1/2 Lower Line
- Exit low Channel, Enter low Channel, Exit high Channel, or Enter high Channel
- Enter Rectangle or Exit Rectangle
- Enter Triangle or Exit Triangle

7.5. Alerts for a Signal

The header of the ***Signal*** column allows you to choose one of the *signals* from the library, which will be evaluated on the detection date. The parameters of the *Signal* are the default parameters.

Click on the button ⌄⌄ to open the rule selection window and then click on the button ⌃⌃ to close it.

With each change, alerts are automatically recalculated and the label Signal OK is written in the column.

7.6. Alerts for a Rule

The header of the ***Rule*** column allows you to choose one of the *rules* from the library, which will be evaluated on the detection date.

Click on the button ⌄⌄ to open the rule selection window and then click on the button ⌃⌃ to close it.

With each change, alerts are automatically recalculated and the label Rule OK is written in the column.

7.7. Indicator

Axial Finance calculates the value of a technical indicator chosen from the software's library, calculated on the detection date. It is not alert information but complementary information to the alerts displayed in the other columns of the table.

For example, alongside a signal alert, it may be useful to know the value of an indicator such as the RSI or the MACD.

Click on the button ⌄⌄ to open the window for selecting the indicator and its parameters and then click on the button ⌃⌃ to close it.

With each change, the indicator is automatically recalculated.

7.8. Notepad

Axial Finance allows you to save free text in a notepad (limited to 2000 characters per instrument).

Click on the icon in the column of the instrument to open the notepad window. The presence of the icon next to the instrument means that the notepad contains text.

Access to the notepad can also be done from the ***Display*** menu of the *chart window* for the instrument in the ***Market Tracking*** area.

8. Real-Time Alerts

This table centralizes all real-time alerts programmed in the software. See the paragraph real-time alerts in the chapter regarding real time.

9. Instrument Rankings

9.1. General Information

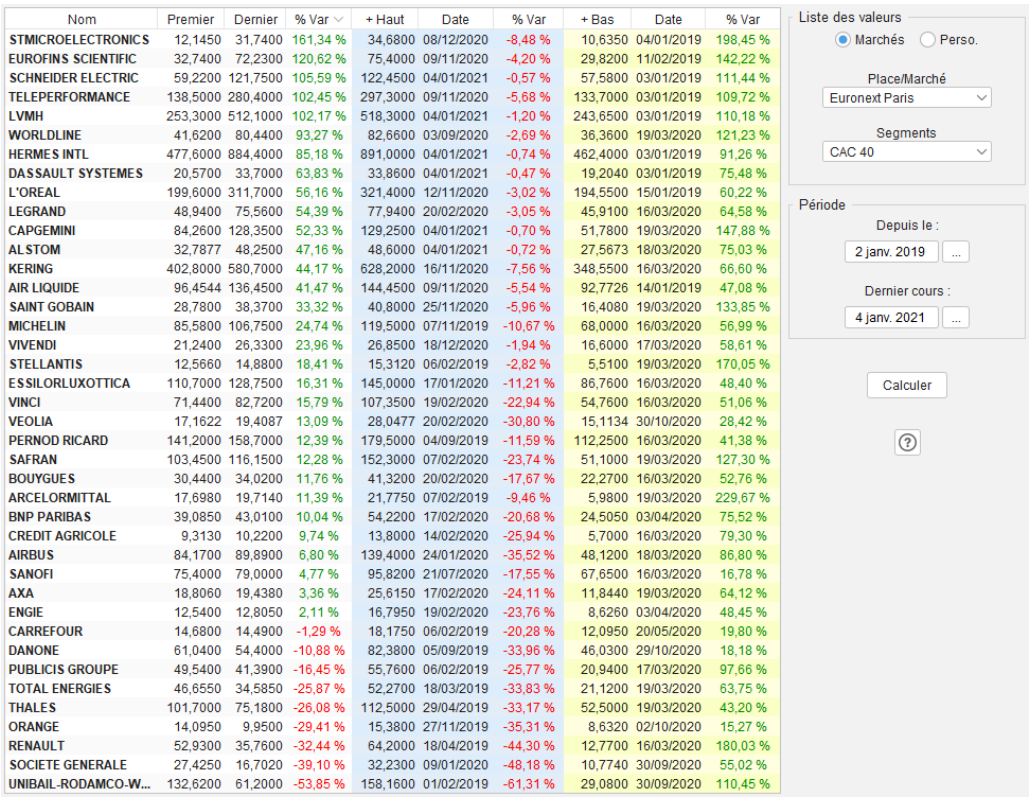
In the ***Trading Tools*** module, select the ***Rankings*** tab.

For all instruments in a market or a *personal list*, ***Axial Finance*** determines the following rankings over a given period based on "end of day" prices:

1. The **% change** between the closing prices at the beginning and end of the period
2. The **highest price** reached
3. The % deviation between the highest price and the last price of the period (**proximity to high extreme**)
4. The **lowest price** reached
5. The % deviation between the lowest price and the last price of the period (**proximity to low extreme**)

> **Important**
>
> If prices for an instrument on the start or end dates are missing from the software's database, the corresponding cells in the rankings table remain empty.

9.2. Presentation of the Rankings Screen



Nom	Premier	Dernier	% Var	+ Haut	Date	% Var	+ Bas	Date	% Var
STMICROELECTRONICS	12,1450	31,7400	161,34 %	34,6800	08/12/2020	-8,48 %	10,6350	04/01/2019	198,45 %
EUROFINS SCIENTIFIC	32,7400	72,2300	120,62 %	75,4000	09/11/2020	-4,20 %	29,8200	11/02/2019	142,22 %
SCHNEIDER ELECTRIC	59,2200	121,7500	105,59 %	122,4500	04/01/2021	-0,57 %	57,5800	03/01/2019	111,44 %
TELEPERFORMANCE	138,5000	280,4000	102,45 %	297,3000	09/11/2020	-5,68 %	133,7000	03/01/2019	109,72 %
LVMH	253,3000	512,1000	102,17 %	518,3000	04/01/2021	-1,20 %	243,6500	03/01/2019	110,18 %
WORLDLINE	41,6200	80,4400	93,27 %	82,6600	03/09/2020	-2,69 %	36,3600	19/03/2020	121,23 %
HERMES INTL	477,6000	884,4000	85,18 %	891,0000	04/01/2021	-0,74 %	462,4000	03/01/2019	91,26 %
DASSAULT SYSTEMES	20,5700	33,7000	63,83 %	33,8600	04/01/2021	-0,47 %	19,2040	03/01/2019	75,48 %
L'OREAL	199,6000	311,7000	56,16 %	321,4000	12/11/2020	-3,02 %	194,5500	15/01/2019	60,22 %
LEGRAND	48,9400	75,5600	54,39 %	77,9400	20/02/2020	-3,05 %	45,9100	16/03/2020	64,58 %
CAPGEMINI	84,2600	128,3500	52,33 %	129,2500	04/01/2021	-0,70 %	51,7800	19/03/2020	147,88 %
ALSTOM	32,7877	48,2500	47,16 %	48,6000	04/01/2021	-0,72 %	27,5673	18/03/2020	75,03 %
KERING	402,8000	580,7000	44,17 %	628,2000	16/11/2020	-7,56 %	348,5500	16/03/2020	66,60 %
AIR LIQUIDE	96,4544	136,4500	41,47 %	144,4500	09/11/2020	-5,54 %	92,7726	14/01/2019	47,08 %
SAINT GOBAIN	28,7800	38,3700	33,32 %	40,8000	25/11/2020	-5,96 %	16,4080	19/03/2020	133,85 %
MICHELIN	85,5800	106,7500	24,74 %	119,5000	07/11/2019	-10,67 %	68,0000	16/03/2020	56,99 %
VIVENDI	21,2400	26,3300	23,96 %	26,8500	18/12/2020	-1,94 %	16,6000	17/03/2020	58,61 %
STELLANTIS	12,5660	14,8800	18,41 %	15,3120	06/02/2019	-2,82 %	5,5100	19/03/2020	170,05 %
ESSILORLUXOTTICA	110,7000	128,7500	16,31 %	145,0000	17/01/2020	-11,21 %	86,7600	16/03/2020	48,40 %
VINCI	71,4400	82,7200	15,79 %	107,3500	19/02/2020	-22,94 %	54,7600	16/03/2020	51,06 %
VEOLIA	17,1622	19,4087	13,09 %	28,0477	20/02/2020	-30,80 %	15,1134	30/10/2020	28,42 %
PERNOD RICARD	141,2000	158,7000	12,39 %	179,5000	04/09/2019	-11,59 %	112,2500	16/03/2020	41,38 %
SAFRAN	103,4500	116,1500	12,28 %	152,3000	07/02/2020	-23,74 %	51,1000	19/03/2020	127,30 %
BOUYGUES	30,4400	34,0200	11,76 %	41,3200	20/02/2020	-17,67 %	22,2700	16/03/2020	52,76 %
ARCELORMITTAL	17,6980	19,7140	11,39 %	21,7750	07/02/2019	-9,46 %	5,9800	19/03/2020	229,67 %
BNP PARIBAS	39,0850	43,0100	10,04 %	54,2200	17/02/2020	-20,68 %	24,5050	03/04/2020	75,52 %
CREDIT AGRICOLE	9,3130	10,2200	9,74 %	13,8000	14/02/2020	-25,94 %	5,7000	16/03/2020	79,30 %
AIRBUS	84,1700	89,8900	6,80 %	139,4000	24/01/2020	-35,52 %	48,1200	18/03/2020	86,80 %
SANOFI	75,4000	79,0000	4,77 %	95,8200	21/07/2020	-17,55 %	67,6500	16/03/2020	16,78 %
AXA	18,8060	19,4380	3,36 %	25,6150	17/02/2020	-24,11 %	11,8440	19/03/2020	64,12 %
ENGIE	12,5400	12,8050	2,11 %	16,7950	19/02/2020	-23,76 %	8,6260	03/04/2020	48,45 %
CARREFOUR	14,6800	14,4900	-1,29 %	18,1750	06/02/2019	-20,28 %	12,0950	20/05/2020	19,80 %
DANONE	61,0400	54,4000	-10,88 %	82,3800	05/09/2019	-33,96 %	46,0300	29/10/2020	18,18 %
PUBLICIS GROUPE	49,5400	41,3900	-16,45 %	55,7600	06/02/2019	-25,77 %	20,9400	17/03/2020	97,66 %
TOTAL ENERGIES	46,6550	34,5850	-25,87 %	52,2700	18/03/2019	-33,83 %	21,1200	19/03/2020	63,75 %
THALES	101,7000	75,1800	-26,08 %	112,5000	29/04/2019	-33,17 %	52,5000	19/03/2020	43,20 %
ORANGE	14,0950	9,9500	-29,41 %	15,3800	27/11/2019	-35,31 %	8,6320	02/10/2020	15,27 %
RENAULT	52,9300	35,7600	-32,44 %	64,2000	18/04/2019	-44,30 %	12,7700	16/03/2020	180,03 %
SOCIETE GENERALE	27,4250	16,7020	-39,10 %	32,2300	09/01/2020	-48,18 %	10,7740	30/09/2020	55,02 %
UNIBAIL-RODAMCO-W...	132,6200	61,2000	-53,85 %	158,1600	01/02/2019	-61,31 %	29,0800	30/09/2020	110,45 %

The table includes for each instrument:

- The closing price of the first day of the selected period
- The closing price of the last day of the selected period
- The % change between this last price and the price of the first day (if the price does not exist on the start date of the ranking, the percentage change is not calculated)
- The **highest price** reached during the period
- The date of the highest price during the period
- The % deviation between the last price and this high (this percentage is zero when the last price is equal to the period's high)
- The **lowest price** during the period
- The date of the lowest price during the period
- The % deviation between the last price and this low (this percentage is zero when the last price is equal to the period's low)

9.3. Selection of Ranking Calculation Parameters

On the right of the rankings table, the parameter selection area:

i. In the ***List of instruments*** frame, choose between ***Markets*** or ***Perso*** for a *personal list*, then, depending on the case, one of the markets for an exchange or one of the *personal lists*.

ii. In the ***Period*** frame, define the start and end dates of the ranking.

After calculation, instruments are ranked by descending performance. It is possible to click on the column headers to obtain a different sorting. For example, sorting by the column showing the deviation from the high price allows identifying instruments close to their high extreme during the period considered.

Chapter 5. Portfolio Management

1. General Information

1.1. Introduction

In the general menu, select the ***Portfolio Management*** tab.

Axial Finance allows you to manage any number of *portfolios*, where each *portfolio* can contain instruments purchased on different exchanges, including all types of instruments: stocks, trackers, warrants, futures, commodities, currencies, etc.

Axial Finance allows you to choose the currency in which the accounting of *portfolio* operations is maintained. This currency is called the *reference currency*. The *reference currency* is the same for all *portfolios*.

The functions performed in this module are as follows:

- Creation or cancellation of a *portfolio*
- Purchase of an instrument at *spot* or *via SRD*
- Sale of an instrument (total or partial quantity) at *spot*
- *Short selling* of an instrument
- Calculation of brokerage fees, CRD fees, and exchange tax
- End-of-month settlement of SRD operations (settlement, rollover)
- Calculation of available coverage for SRD orders (leverage effect)
- Cash deposit or withdrawal
- Receipt of dividends and free shares
- Consultation and printing of the *portfolio* statement
- Automatic calculation of the *net asset value (NAV)* upon market price updates
- Calculation of *potential capital gain*
- Graphical presentation of *portfolio* performance
- Consultation and printing of the *transaction journal*
- Exporting the *transaction journal* to an Excel file
- Cancellation of a limit order or an operation
- Consultation and printing of monthly settlement statements
- Setting target prices, support, and resistance levels for each instrument in the *portfolio*
- Graphical presentation of *portfolio* composition by instrument, market, or industry sector
- Backup and restoration of *portfolios* and *transaction journals*

If the *real-time feed* is active, the *portfolio* can be automatically updated in real time with *net asset values* and *potential capital gains*.

1.2. Portfolio Reference Currency

A *portfolio* may contain orders executed with instruments purchased or sold on different currency exchanges. For example, with the Euro as the *reference currency*, the *portfolio* can contain instruments purchased in USD on the American market.

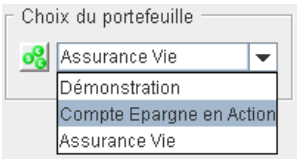
In the case of an order in a currency different from the *reference currency*, it will be necessary to provide the exchange rate for the operation. The *net asset value* of the *portfolio* is calculated in the *reference currency* using the last known exchange rate.

To define the *reference currency*, go to the general menu ***Preferences***, choose the option ***Portfolio reference currency*** and check the desired currency in the provided list.

1.3. Description of the Portfolio Management Screen

This screen consists of four main parts:

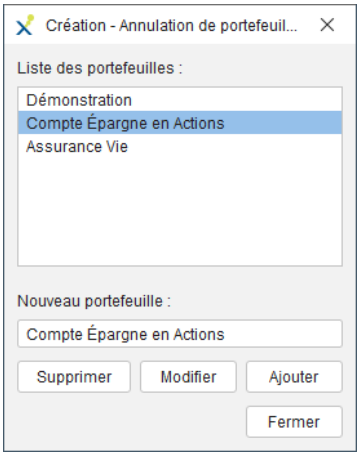
1. At the top left, the ***Portfolio Selection*** dropdown menu for selecting the *portfolio* on which operations will be performed.



2. At the top right, the ***Portfolio status in (Reference Currency)*** frame displays the global status of the selected *portfolio*.
3. On the left, the display area for the *portfolio* content, with:
   - the menu of operations that can be performed on the *portfolio*
   - a table providing the list of open positions at *spot* and in *SRD purchase* (including quantity in book, price in the exchange's currency, and the *net asset value* in the *reference currency*)
   - if applicable, a second table for open short selling positions; this table is only presented if such positions actually exist
4. In the center, the display of all information for the position selected in the list of open positions. This area includes three tabs at its top to choose:

Status	Detailed information for the selected position, with a simplified price graph over the last twelve months
Allocation	A graphical representation of the instruments composing the *portfolio* according to several criteria
Performance	The performance graph of the *portfolio* since its creation

1.4. Creation and cancellation of a portfolio



i. Click on the button ⚙ next to the ***Portfolio Selection*** dropdown, or go to the general menu ***Edit*** and choose the option ***Create/ Cancel portfolios*** to open the dialog window shown opposite.
ii. To create a new *portfolio*, enter the name in the ***New portfolio*** field and click the **Add** button.
iii. To modify a *portfolio* name, select it in the ***List of portfolios*** frame. Its name will appear in the ***New portfolio*** field. Modify this name and then click the **Modify** button.
iv. To Delete a *portfolio*, select it in the ***List of portfolios*** frame. Click the **Delete** button. The software will request ***Confirmation*** of deletion because all data in memory will be permanently erased.

Important

Axial Finance prohibits the deletion of a *portfolio* if at least one position remains open.

1.5. Exchange rate for orders in foreign currency

Each *portfolio* can include instruments purchased on different exchanges, which are then recorded in their respective currencies: Euros, Dollars, Pounds Sterling, etc. On each display screen, the instrument's currency is specified.

The *net asset value* of the *portfolio* is always calculated in the *reference currency* using the last known exchange rate in the software. The exchange rate is automatically updated by the software at regular intervals.

For recording buy or sell orders in a currency different from the *reference currency*, ***Axial Finance*** asks for the corresponding exchange rate. This rate is stored in memory for subsequent orders.

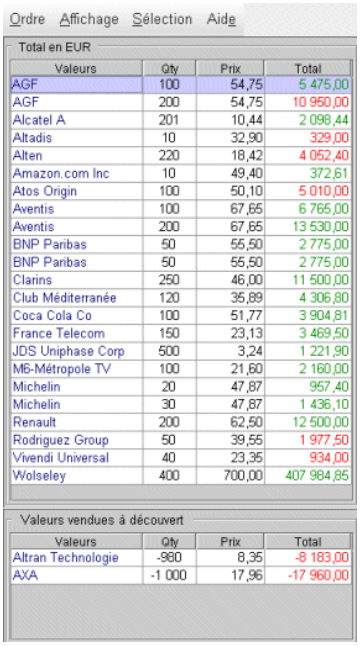
2. Portfolio

2.1. Portfolio operations menu

From this menu, the following operations can be performed:

1. ***Order*** to execute an order on the position selected in the *portfolio*.
   - ***Cash purchase*** or ***SRD purchase*** to record a purchase order for an existing position of the same type
   - ***Cash sale*** or ***SRD sale*** to sell part or all of the instruments in the position
   - ***Short sell*** to add a short selling order
   - ***Settle SRD purchase*** to settle or roll over the position
   - ***Settle short sale*** to repurchase or roll over the position
   - ***Dividends*** to pay dividends into an open position (note: if dividends are to be paid for a closed position, see the corresponding procedure in the Transaction journal)
   - ***Free shares*** to add free shares to the position
   - ***Portfolio cash*** to perform a cash deposit or withdrawal from the *portfolio*
   - ***Miscellaneous portfolio fees*** to record various fees in the *portfolio* (for example: account maintenance fees, etc.)
2. ***Display***
   - ***Transaction journal*** to consult transactions made since the creation of the *portfolio*, and if necessary, cancel a transaction or modify previously recorded fees
   - ***Settlement statement*** to consult the monthly settlement statement of SRD transactions
   - *Real-time net asset value* to activate real-time updates for the *portfolio* XE
   - ***Notepad*** to record personal notes
   - ***Print*** to print open positions of the *portfolio*
3. ***Selection***
   - ***Brokerage fees*** to choose the brokerage fee schedule applied to buy and sell orders of the open *portfolio*. The different fee schedules are defined in the general menu ***Preferences***, option ***Brokerage fees***. A different schedule can be chosen for each *portfolio*.
4. ***Help***
   - ***Portfolio help*** to access the **Portfolio Management** chapter of the user manual.

2.2. Table of open positions



Depending on the types of open positions, one or two lists are present in the table:

- open positions at *spot* and in *SRD purchase*
- open positions in *short selling*

For each position, the table indicates:

- The instrument name
- The quantity in book (balance of purchases and sales)
- The last price in the currency of the instrument's home exchange
- The net asset value in the *reference currency*

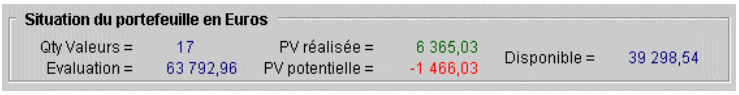
Depending on whether the position is profitable or loss-making, the *net asset value* is displayed in green or red.

By right-clicking on a position, the context menu opens, allowing you to record a new order for that position.

2.3. Summary of portfolio status

The ***Portfolio status*** area displays for the selected *portfolio*:

1. the number of open positions
2. the *net asset value (NAV)* at the latest market prices
3. available cash
4. realized *capital gain*
5. potential *capital gain* at the latest prices



The *net asset value* and the *capital gain* for instruments purchased on an exchange in a currency different from the *reference currency* are calculated using both the exchange rate at the time of the transaction and the current exchange rate known to the software.

2.4. Detail of a portfolio position

Upon selecting a position in one of the two tables of the *portfolio*, ***Axial Finance*** displays the position details in the ***Status*** tab.

This ***Status*** screen consists of two parts:

1. The upper part, ***Position selected in the portfolio***, summarizes the position status:

   - The flag of the exchange's currency
   - The instrument code (ticker)
   - The instrument name
   - The market to which the instrument belongs in the software
   - The current quantity in book
   - The unit *cost price* at purchase in the exchange's currency (including various fees). If the quantity in book resulted from multiple orders, the displayed *cost price* is the average of those orders.
   - The date the position was opened
   - The transaction type, specifically for Paris-based SRD transactions, mentioning:
     - *SRD purchase to settle* if an instrument was purchased via SRD and not yet settled, otherwise *SRD purchase rolled over*
     - *Short sale to liquidate* if an instrument was short sold and not yet repurchased, otherwise *Short sale rolled over*
   - The last known price of the instrument
   - The date of this last price
   - The *realized capital gain*
   - The *potential capital gain* (not including upcoming fees)
2. The lower part, ***Graphical Representation***, shows a simplified graph of the price evolution over the last twelve months. In this graph, you can add information regarding target prices, *resistance and support levels*, and stop levels. These details appear both in data fields above the graph and as horizontal lines on the graph itself.

   Three target prices can be memorized based on your needs:
   - Short-Term Target (***ST Target***)
   - Medium-Term Target (***MT Target***)
   - Long-Term Target (***LT Target***)

   Additionally, two resistance levels and two support levels can be memorized.

Finally, a stop level determined by the user (generally the threshold below which the user is decided to sell).

These ***resistance and support levels*** are identical to those displayed in the ***chart windows*** of the ***Market Tracking*** area (see paragraph Searching for an instrument) and are also used by ***Axial Finance*** to trigger alerts when operating in real time.

2.5. Entering and modifying target, resistance, support, and stop levels

When a position is open in the *portfolio*, the target and stop data fields are set to zero. These fields above the graph must be used to enter the initial level, which will then be automatically represented by the corresponding line on the graph.

To delete a line from the graph, set the data field to zero.

Once a line is present on the graph, two methods can be used to modify its level:

- either enter a new number in the corresponding data field
- or use the mouse cursor to select the line on the graph (the cursor changes to a hand) and drag it vertically to the desired height while holding the left mouse button. The data field above the graph updates as you move the cursor.

2.6. Using the notepad

For each instrument in the *portfolio*, this notepad allows you to record text comprising a maximum of 2000 characters.

3. Cash and SRD purchase orders

3.1. General Information

Axial Finance records *cash purchases* and *SRD purchases* by:

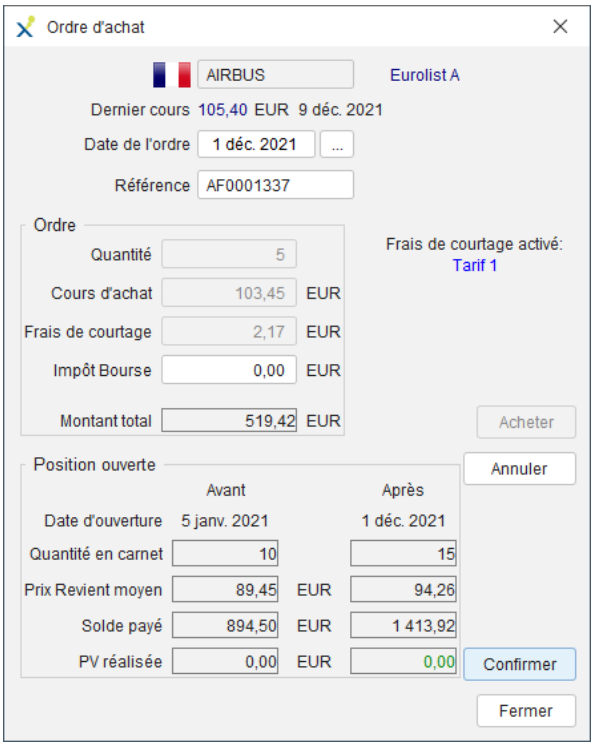
- verifying if the available cash is sufficient
- automatically calculating brokerage fees and exchange tax
- displaying the *portfolio* status before and after the purchase
- taking into account the real exchange rate for purchases in a currency different from the *reference currency*
- verifying if the coverage is sufficient for *SRD purchases* (leverage effect) based on the broker's specific rules entered by the user

To record a purchase order or simply simulate one:

i. Select the instrument in the software's *reference list* and right-click to open the context menu.
ii. Choose the option ***Cash purchase*** or ***SRD purchase***. The ***SRD purchase*** option is only activated if the selected instrument is indeed part of the SRD.

> **Important**
>
> In the case of a purchase order for an already open position, simply select that position in the *portfolio*, right-click on it, and choose the ***Cash purchase*** or ***SRD purchase*** option from the context menu, as appropriate.

The following entry window opens (example of a *cash purchase* order):



The procedure then follows these steps:

i. Enter the order date
ii. Optionally, enter the order reference
iii. Enter the quantity of instruments purchased
iv. Enter the purchase price in the instrument's currency (see paragraph Exchange rate)
v. Enter the fees according to their nature if performing a manual entry, or validate the automatic calculation of these fees (see paragraph Order fees)
vi. Click the **Buy** button to first simulate the operation
vii. Then, to effectively record the order in the *portfolio*, click the **Confirm** button; otherwise, to remain with a simple simulation, click the **Cancel** button.

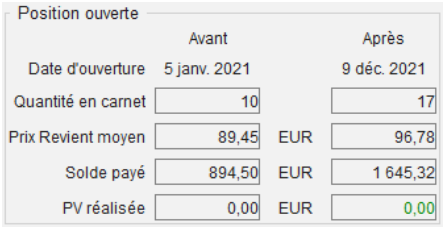
At any time, by clicking the **Close** button, the purchase order is interrupted without affecting the *portfolio*.

> **Note**
>
> By clicking the **Buy** button, the program checks if the available cash is sufficient for the intended purchase. A message warns you if the cash is insufficient, though it does not prevent you from proceeding with the procedure.

3.2. Portfolio status before and after the order

The lower part of the purchase window shows the position status before and after the execution of the order.

If this instrument is already present in the *portfolio*, the ***Before*** column displays the date of the first purchase, the quantity in book, the average unit *cost price* at purchase, and the amount paid for the quantity in book.



By clicking the **Buy** button, the software displays in the ***After*** column the result of the order for the position, but without recording it in the *portfolio*.

The purchase will be effective upon clicking the **Confirm** button, which also closes the purchase window. By clicking the **Cancel** button, both columns revert to their initial state, and it is then possible to modify the quantity, price, or fees.

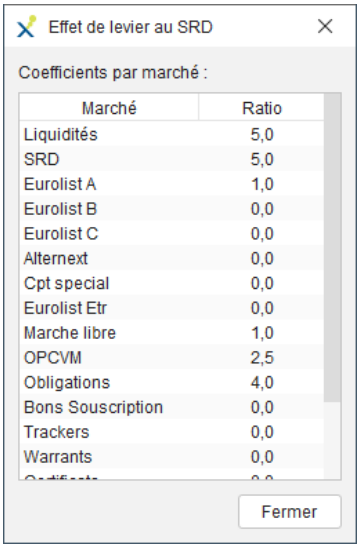
3.3. Specifics of an SRD Purchase - Estimating leverage effect

Generally, the CRD fees for an *SRD order* are known precisely at the time of settlement at the end of the month (settlement or rollover) or at the time of sale and will thus be entered at that time. However, it is also possible to enter them in the window above at the time of purchase.

In the case of an SRD order, the *Coverage* button appears in the purchase window, allowing you to request an estimation of the available coverage.

The coverage calculation depends on the broker, as each broker has their own calculation rules. ***Axial Finance*** provides the user with a tool to estimate this coverage based on the rules applied by the broker. Obviously, this calculation cannot in any way substitute for that of the broker but provides an approximation that is generally sufficient for estimating the leverage effect.

The rules applied by the broker are memorized as follows:



i. In the general menu ***Preferences***, choose the option ***SRD leverage effect***. The dialog window shown opposite allows you to define the multiplier applied by the broker for each type of instrument that can enter the composition of the *portfolio*.
ii. Click in the *Ratio* column of the market and enter the corresponding multiplier.
iii. When all relevant markets are filled, click the **Close** button. The ratios for markets not concerned can remain at zero.

For each *SRD purchase* order, the software checks the available coverage and displays an information message if it is not sufficient, though it does not prevent proceeding with the procedure.

3.4. Cancellation of a Purchase Order

Axial Finance has a specific procedure for cancelling a recorded order. See the detailed description in paragraph Cancellation of an order or a position.

4. Cash and SRD sale orders

4.1. General Information

Axial Finance records *cash sales* or *SRD sales* by:

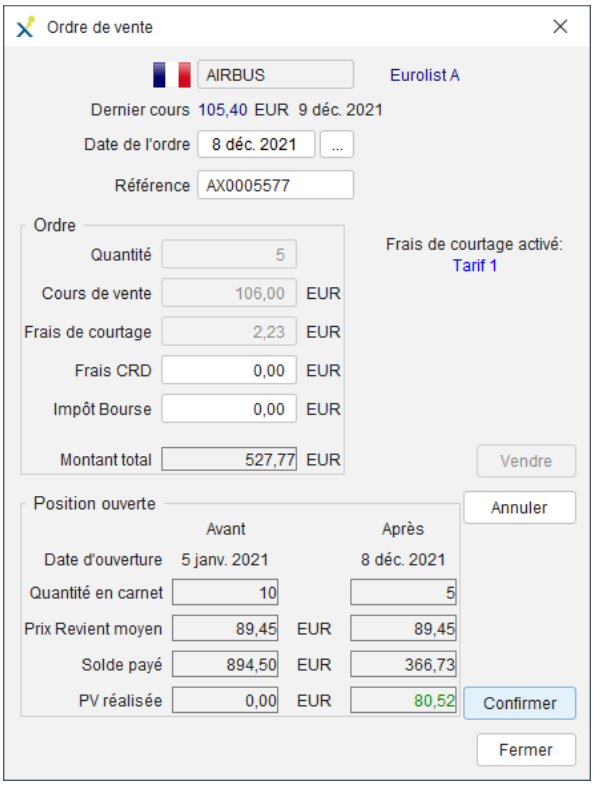
- verifying if the quantity in book is sufficient
- automatically calculating brokerage fees and exchange tax
- displaying the *portfolio* status before and after the sale
- calculating the *realized capital gain*
- taking into account the real exchange rate for sales in a currency different from the *reference currency*

4.2. Cash or SRD sale

To record a *cash sale* or an *SRD sale* for an open position:

- Select this position in the portfolio, open the context menu by right-clicking on it, and then choose, as appropriate, the ***Cash sale*** or ***SRD sale*** option; alternatively, perform this same operation from the ***Order*** menu of the *portfolio*

The window below appears to record the order:



The procedure then follows these steps:

i. Enter the order date
ii. Optionally, enter the order reference
iii. Enter the quantity sold
iv. Enter the sale price in the instrument's currency (see paragraph Exchange rate)

v. Enter the fees according to their nature if performing a manual entry, or validate the automatic calculation of these fees (see paragraph Order fees)
vi. Click the **Sell** button to first simulate the operation
vii. Then, to effectively record the order in the *portfolio*, click the **Confirm** button; otherwise, to remain with a simple simulation, click the **Cancel** button.

At any time, by clicking the **Close** button, the sale order is cancelled without affecting the *portfolio*.

The lower part of the sale window shows the portfolio status for this position. The ***Before*** column displays the date the position was opened, the ***Quantity in book***, the average unit ***Cost price*** at purchase, and the ***Amount paid*** for the quantity in book and any previous ***Realized capital gain***.

By clicking the **Sell** button, the software displays in the ***After*** column the result of the order for the position, but without recording it in the *portfolio*.

The sale will be effective upon clicking the **Confirm** button, which also closes the sale window. By clicking the **Cancel** button, both columns revert to their initial state, and it is then possible to modify the quantity, price, or fees.

4.3. Cancellation of a sale order

Axial Finance has a specific procedure for cancelling an order that has been recorded. See the detailed description in paragraph Cancellation of an order or a position.

5. Short selling orders

5.1. General Information

Axial Finance records *short selling* orders by:

- verifying if the instrument is indeed part of the SRD
- automatically calculating brokerage fees and exchange tax
- displaying the *portfolio* status before and after the short sale
- taking into account the real exchange rate for sales in a currency different from the *reference currency*
- verifying if the coverage is sufficient (leverage effect) based on the broker's specific rules entered by the user

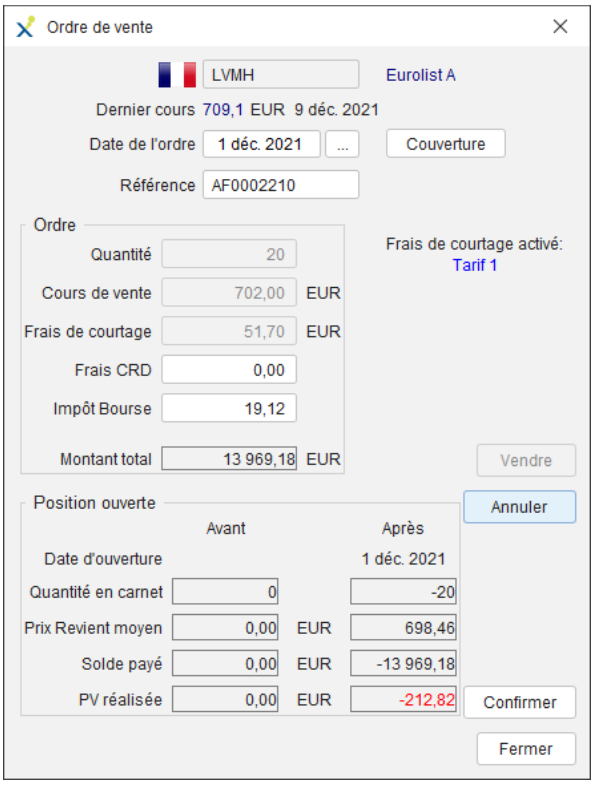
5.2. Short selling

To record a *short selling* order:

i. Select the instrument in the software's *reference list* and right-click to open the context menu.
ii. Choose the option ***Short sell***. This option is not activated if the selected instrument is listed in Paris and is not part of the SRD.

> **Important**
>
> In the case of a *short selling* order for an already open position, simply select it in the *portfolio*, right-click on it to open the context menu, and choose the ***Short sell*** option.

The window below opens, allowing you to record the *short selling*:



The procedure then follows these steps:

i. Enter the order date
ii. Optionally, enter the order reference
iii. Enter the quantity sold
iv. Enter the sale price in the instrument's currency (see paragraph Exchange rate)
v. Enter the fees according to their nature if performing a manual entry, or validate the automatic calculation of these fees (see paragraph ***Order fees***)
vi. Click the **Sell** button to first simulate the operation
vii. Then, to effectively record the order in the *portfolio*, click the **Confirm** button; otherwise, to remain with a simple simulation, click the **Cancel** button.

Generally, the CRD fees are known precisely at the time of settlement (repurchase or rollover). They can be entered at that time.

The recording of the *short sale* in the *portfolio* will be effective upon clicking the **Confirm** button, which also closes the sale window. A position is added to the second table, ***Short selling instruments***. If it is the first instrument *short sold* in the *portfolio*, this table (which was not present on screen because no positions were open) will appear below the main table.

By clicking the **Cancel** button, both columns revert to their initial state, and it is then possible to modify the quantity, price, or fees.

6. Order fees

Brokerage fees can be automatically calculated by ***Axial Finance*** based on a user-defined configuration (see paragraph Fee setup), or entered manually on a case-by-case basis. The activation of the automatic calculation mode is noted in the order entry window.

For each buy order, ***Axial Finance*** can record fees according to the three following categories:

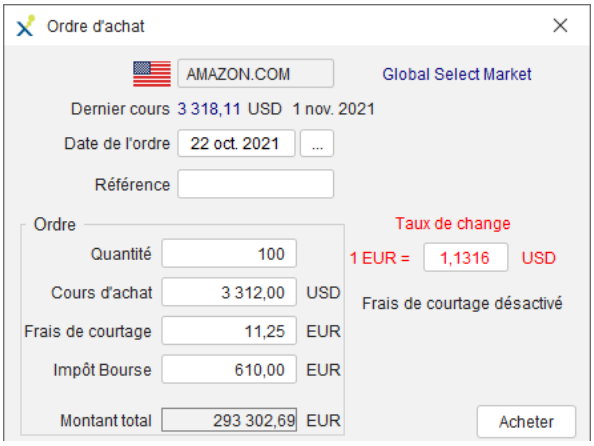
- **Brokerage fees**
- **CRD fees** (to be entered if necessary in the case of an *SRD purchase*, or during a settlement or rollover operation)
- **Exchange tax**: these fees are either automatically calculated according to the user-defined configuration (see procedure in paragraph Fee setup), or entered manually

Fees are accounted for in the *reference currency*.

The automatically calculated fee amount can be modified by the user in the corresponding field in the purchase window. You should not subsequently re-select the ***Quantity*** or ***Order price*** fields, as the software will re-apply the result of the automatic calculation.

7. Exchange rate

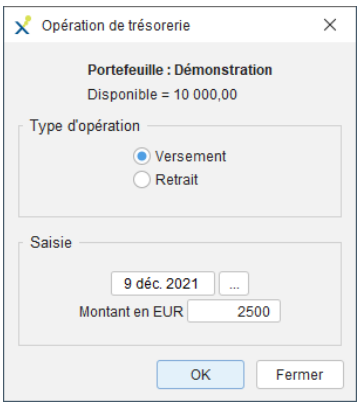
For orders in a currency different from the *reference currency*, ***Axial Finance*** displays an additional ***Exchange rate*** field in the order entry window for input. This field is pre-filled upon opening the window with the last recorded exchange rate in the software, which can be modified if necessary.



8. Miscellaneous operations

8.1. Cash operations

To deposit or withdraw cash from the selected *portfolio*:



i. Choose the ***Order*** then ***Portfolio cash*** options from the *portfolio* menu to open the window shown opposite.
ii. Define the operation type: ***Deposit*** or ***Withdrawal***.
iii. Enter the operation date.
iv. Enter the amount in the *reference currency* in the input field.
v. Click the **OK** button.

The new cash balance is updated in the ***Portfolio status*** area.

8.2. Receipt of dividends or coupons

There are two procedures for receiving dividends or coupons, depending on whether the instrument in question is in an open position or a closed position.

1. When the position is open, select it and choose the ***Order*** then ***Dividends*** options from the *portfolio* menu to open the window below:

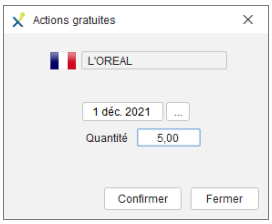
   i. Enter the operation date.
   ii. Enter the amount of dividends or coupons received in the *reference currency*.
   iii. Click the **Confirm** button.

2. When the position is closed, see the procedure in paragraph Transaction journal

The new cash balance is updated in the ***Portfolio status*** area.

8.3. Distribution of free shares

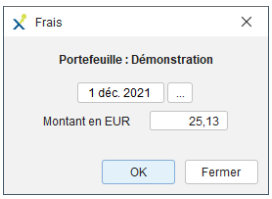
> **Remark**
>
> If at the time of recording free shares the position is no longer open, it is necessary to first open a new one with a price of zero.



i. Choose the ***Order*** then ***Free shares*** options from the *portfolio* menu to open the window shown opposite.
ii. Enter the operation date.
iii. Enter the number of free shares received in the input field.
iv. Click the **Confirm** button.

8.4. Recording miscellaneous fees at the portfolio level

In the case of global fees at the *portfolio* level that do not relate to a specific instrument (for example: account maintenance fees), these fees are recorded as follows:



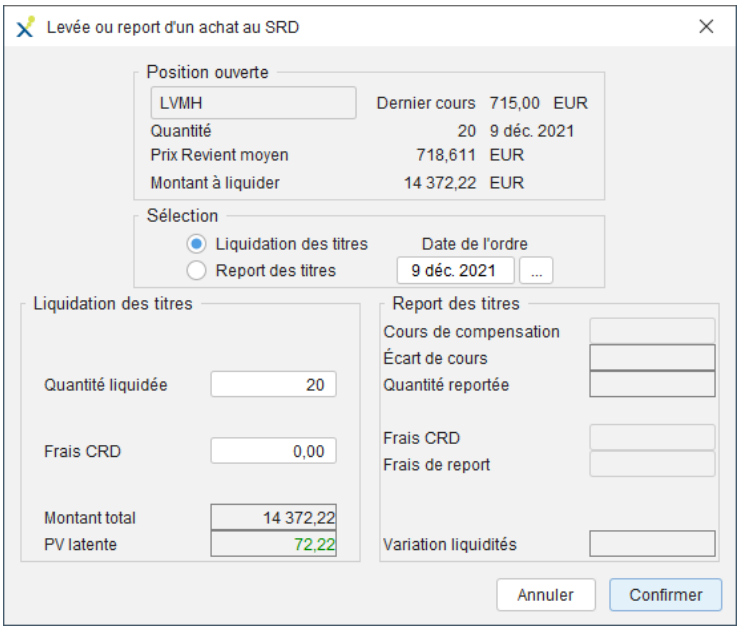
i. Choose the ***Order*** then ***Miscellaneous portfolio fees*** options from the *portfolio* menu to open the window shown opposite.
ii. Enter the operation date.
iii. Enter the fee amount in the input field.
iv. Click the **OK** button.

9. End-of-month settlement for SRD

9.1. Settlement of an SRD purchase

For an instrument purchased via SRD and not yet settled, the mention *SRD purchase to settle* is displayed in the top frame of the ***Status*** screen when it is selected in the *portfolio*.

To record the settlement at the end of the trading month, choose the ***Order*** then ***Settle SRD purchase*** options from the *portfolio* menu to open the window below, or right-click directly on the position line in the *portfolio* table to choose this option.



This window includes the following elements:

- The ***Open Position*** frame with:
  - the instrument name
  - The last quoted market price
  - The quantity in book and the position opening date
  - The average *cost price*
  - The amount to settle
- The ***Selection*** frame to choose between the two settlement options: ***Settlement*** or ***Rollover***, as well as the settlement order date.
- The ***Instruments Settlement*** frame, activated according to the previous selection.
- The ***Instruments Rollover*** frame, activated according to the previous selection.
- The **Confirm** button to record the settlement order:
  - either total or partial settlement of the instruments
  - or rollover of the quantity to the next settlement period
- The **Close** button to close the window or potentially interrupt the current order without affecting the *portfolio*.

9.1.1. Choice of settlement

Axial Finance displays in the ***Settled quantity*** field the quantity of instruments in book. This quantity can be modified if only a partial settlement is performed. However, upon confirmation, an information message will remind you that a balance remains to be settled.

Axial Finance calculates the total amount to be paid at settlement (purchase of instruments including fees) and indicates the *potential capital gain* based on the last known price.

Upon confirmation of the settlement:

- When the settlement covers all instruments, the *portfolio* order becomes equivalent to a *cash purchase*.
- When the settlement only covers a partial quantity of instruments, the *portfolio* will then contain two positions for this instrument: the first with the settled quantity (equivalent to a *cash purchase*) and the second as an *SRD purchase to settle* for the remaining balance.

9.1.2. Choice of rollover

As a principle, a rollover order applies to all instruments not yet sold or settled. If applicable, it is therefore necessary to proceed with one or the other of these operations before recording a rollover.

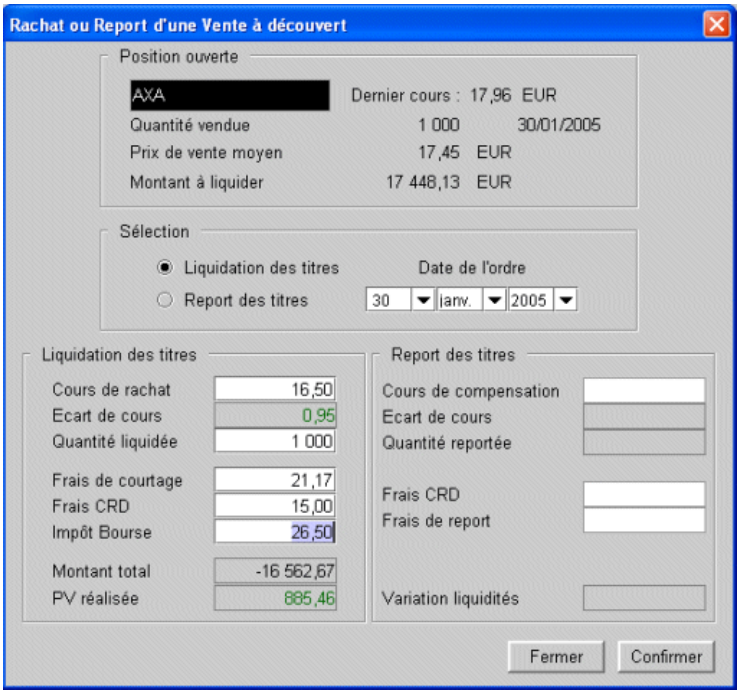
Axial Finance requires the entry of the compensation price, CRD fees, and rollover fees, then calculates:

- the price difference between the purchase price and the compensation price,
- the change in cash that will be recorded in the *portfolio* upon confirmation of the rollover. In accordance with SRD rules, the compensation price becomes the purchase price for the quantity of instruments rolled over.

9.2. Liquidation of a short sale

For a position of type *short selling* that has not yet been repurchased or rolled over, the mention *Short sale to liquidate* is displayed in the top frame of the ***Status*** screen when it is selected.

To proceed with recording the settlement at the end of the trading month, choose the ***Order*** then ***Liquidation Short sale*** options from the *portfolio* menu, or right-click directly on the position line in the ***Short selling instruments*** table to choose this option.



This window includes the following elements:

- The ***Open Position*** frame with:
  - the instrument name
  - The last quoted market price
  - The quantity in book and the position opening date
  - The average *cost price*

  - The amount to liquidate
- The ***Selection*** frame to choose between the two settlement options: ***Liquidation*** or ***Rollover***, as well as the settlement order date.
- The ***Instruments Liquidation*** frame, activated according to the previous selection.
- The ***Instruments Rollover*** frame, activated according to the previous selection.
- The **Confirm** button to record the liquidation order:
  - either the repurchase of instruments for delivery, in total or partial quantities
  - or the rollover to the next settlement period
- The **Close** button to close the window or potentially interrupt the order without consequences for the *portfolio*.

9.2.1. Choice of liquidation

Entering the repurchase price results in the display below of the difference with the *short sale* price.

In the ***Settled quantity*** field, ***Axial Finance*** initially displays the total quantity of instruments sold short. This quantity can be modified if the repurchase is only partial. However, upon confirmation, a message will remind you that a balance remains to be settled.

Axial Finance calculates the repurchase amount (including fees) as well as the Profit/Loss realized.

Upon confirmation of the repurchase:

- If the repurchase covers all instruments, this instrument disappears from the ***Short selling instruments*** table and the profit or loss is added to or deducted from the *portfolio* cash.
- If the repurchase only covers a partial quantity, the quantity in the ***Short selling instruments*** table is reduced accordingly and the profit or loss is added to or deducted from the *portfolio* cash.

9.2.2. Choice of rollover

As a principle, a rollover order applies to all instruments not yet repurchased.

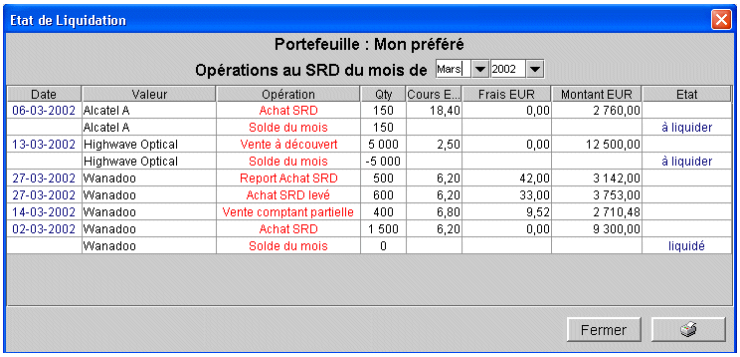
Axial Finance requires the entry of the compensation price, CRD fees, and rollover fees, then calculates:

- the price difference between the sale price and the compensation price,
- the change in cash that will be recorded in the *portfolio* upon confirmation of the rollover.

9.3. Settlement status

Axial Finance prepares a monthly statement for SRD orders (*SRD purchases* and *short sales*).

Choose the ***Order*** then ***Settlement statement*** options from the *portfolio* menu to open the window for SRD orders of a specific month.



Date	Valeur	Opération	Qty	Cours E...	Frais EUR	Montant EUR	Etat
06-03-2002	Alcatel A	Achat SRD	150	18,40	0,00	2 760,00	
	Alcatel A	Solde du mois	150				à liquider
13-03-2002	Highwave Optical	Vente à découvert	5 000	2,50	0,00	12 500,00	
	Highwave Optical	Solde du mois	-5 000				à liquider
27-03-2002	Wanadoo	Report Achat SRD	500	6,20	42,00	3 142,00	
27-03-2002	Wanadoo	Achat SRD levé	600	6,20	33,00	3 753,00	
14-03-2002	Wanadoo	Vente comptant partielle	400	6,80	9,52	2 710,48	
02-03-2002	Wanadoo	Achat SRD	1 500	6,20	0,00	9 300,00	
	Wanadoo	Solde du mois	0				liquidé

The dropdown list at the top of the window allows you to select the month.

Orders relating to the same instrument are grouped together and conclude with the line ***Monthly balance***, which indicates in the ***Status*** column:

- either *to settle* with the quantity of instruments remaining to be settled
- or *settled* when all settlement, repurchase, or rollover orders have been completed

To print the monthly statement, click the button.

9.3.1. Example for an SRD Purchase

- 1500 instruments are purchased via SRD on 03/02/2002 at 6.20 EUR.
- On 03/14/2002, 400 instruments are sold for a net amount of 2710.48 EUR. The transaction journal shows the *realized capital gain* (which is 230.48 EUR).
- At the end-of-month settlement in March, the settlement covers 600 instruments, and the balance of 500 instruments is rolled over to the next month:

  Upon settlement of the 600 instruments, the corresponding payment is made for an amount of 3753.00 EUR (including fees), and the rollover of the 500 balance at a compensation price of 7.00 EUR, with 42.00 EUR in fees, results in a *capital gain* of 358.00 EUR as indicated in the *transaction journal*.

  In the *portfolio*, there are now two open orders:
  - the first for the 400 instruments considered as purchased at *spot* at 6.20 EUR on 03/27/2002,
  - the second for the 500 rolled-over instruments, dated the first of the following month, and purchased via SRD at 7.00 EUR (compensation price).

10. Transaction journal

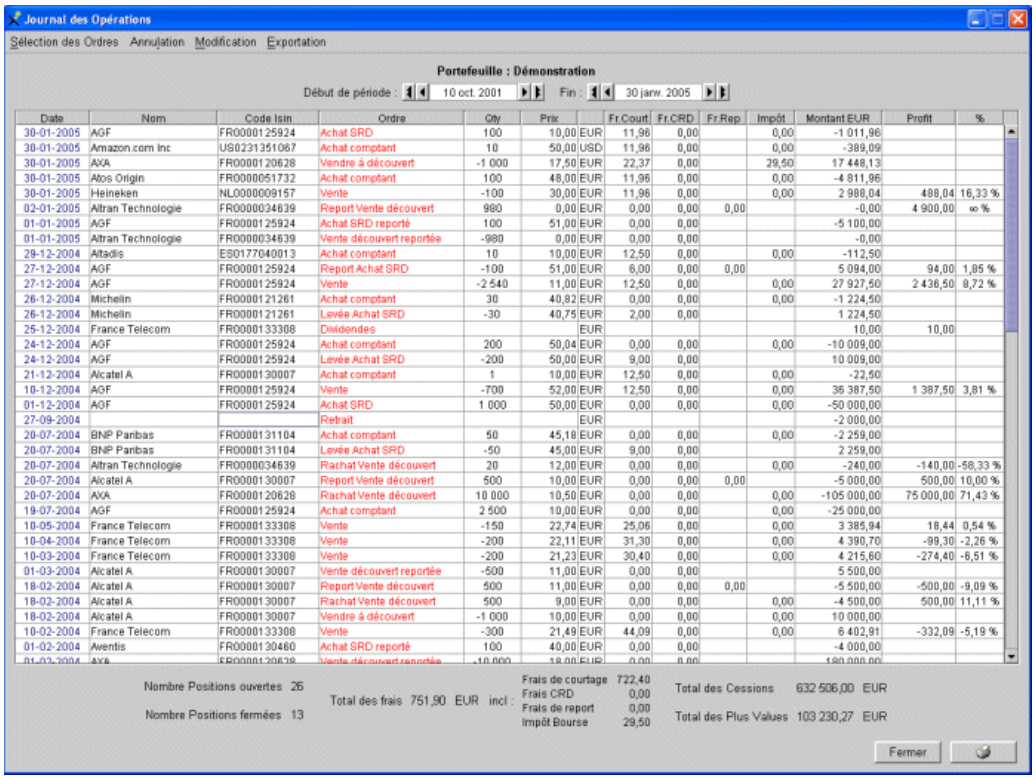
10.1. General Information

Axial Finance records and retains in memory all orders executed on the *portfolios*.

To open the *transaction journal* for a *portfolio*, choose the ***View*** then ***Transaction journal*** options from the *portfolio* menu.

This window includes a menu to perform the operations described below, and also allows you to choose a specific period for displaying orders in chronological order.

At the bottom of the window, an area totals the amounts related to the displayed orders, the total sales, and the *capital gains* over the selected period.



For each order, the journal indicates:

- The order date
- The order reference
- the instrument name
- The ISIN code
- The order type from the following list: *Cash purchase*, *SRD purchase*, *Cash sale*, *Partial cash sale*, *SRD purchase settled*, *SRD purchase rolled over*, *SRD purchase to roll over*, *Short selling*, *Short sale rollover*, *Short sale rolled over*, *Short sale repurchase*, *Deposit*, *Withdrawal*, *Dividends*, *Split*, *Free shares*
- The quantity of instruments (except in the case of cash deposits or withdrawals and nominal division, for which the indicated quantity corresponds to the nominal division ratio)
- The order price (in the currency of the exchange where the order was executed)
- The currency of that exchange
- Brokerage fees (in the *reference currency*)
- CRD fees (in the *reference currency*)
- Rollover fees (in the *reference currency*)
- Exchange tax (in the *reference currency*)
- The order amount (in the *reference currency*)
- The realized capital gain or loss (if applicable)
- The percentage of gains or losses

10.2. Order selection

The orders displayed in the journal can be filtered using the ***Order selection*** option from the window menu. The following filters are available:

1. ***All positions***

2. ***Open positions***
3. ***Closed positions***
4. ***Orders for an instrument*** to limit to orders related to the same instrument
5. ***Orders for a position*** to limit to orders belonging to a specific position

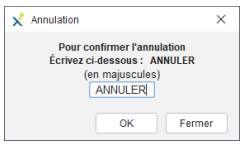
In the latter two cases, first select the instrument or the position.

The filtered orders can also be limited to a period of time. Display the start and end dates of the period at the top of the window. Upon opening the journal window, the start date is that of the oldest order in the *portfolio*.

At the bottom of the window, the totaled amounts are relative to the displayed orders. Thus, to find the sum of order fees over a year, simply display the corresponding period with the ***All positions*** option.

10.3. Cancellation of an order or a position

Axial Finance provides the possibility to cancel an order or a position to correct a data entry error.



i. Select the order or an order from the position to be cancelled.
ii. Choose the ***Cancellation*** then ***Order*** or ***Position*** options from the window menu.
iii. Confirm the cancellation request by typing in capital letters: **CANCEL**.
iv. Then click the **OK** button; otherwise, interrupt the cancellation by clicking the **Close** button.

The cancellation of an order that closed a position will reopen that position.

Important

The cancellation of orders within a position must be performed in descending chronological order of entry. ***Axial Finance*** verifies the chronology of the orders and the user is warned with an error message when the cancellation request is inconsistent with the sequence of orders entered for that position.

10.4. Modification of fees and dividends

Fees or dividends from an executed order can be modified after the fact. Select the order, then open the modification window by choosing the ***Modification*** then ***Fees*** or ***Dividends*** options from the window menu.

10.5. Exporting the transaction journal to an Excel file

The content of the displayed journal can be exported to an Excel file. In the window menu, choose the ***Export*** then ***Excel File*** option. Choose the destination directory and click the **Export** button.

The created Excel file is named *Ledger* followed by the current date.

10.6. Printing the transaction journal

To print the *transaction journal*, click the button at the bottom of the window.

11. Allocation of open positions

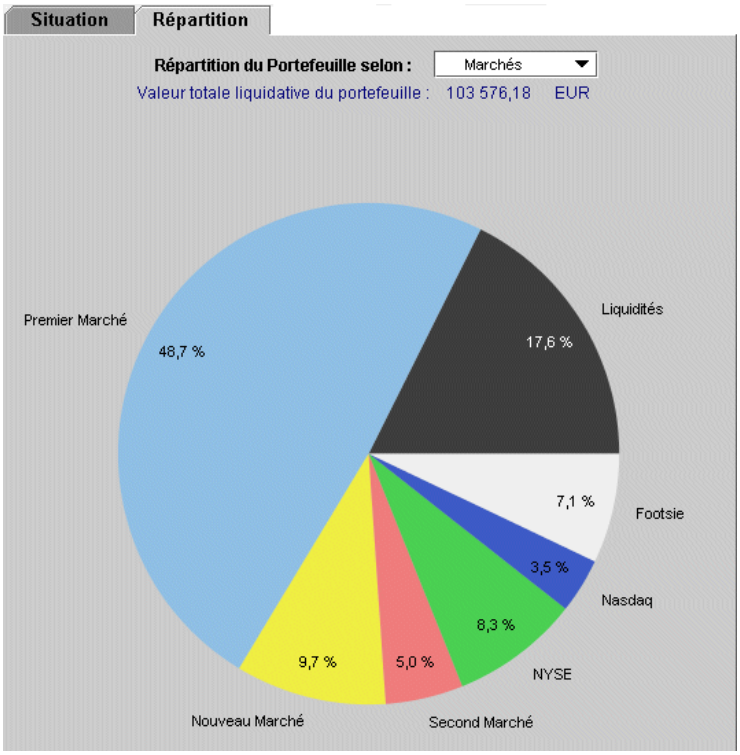
11.1. General Information

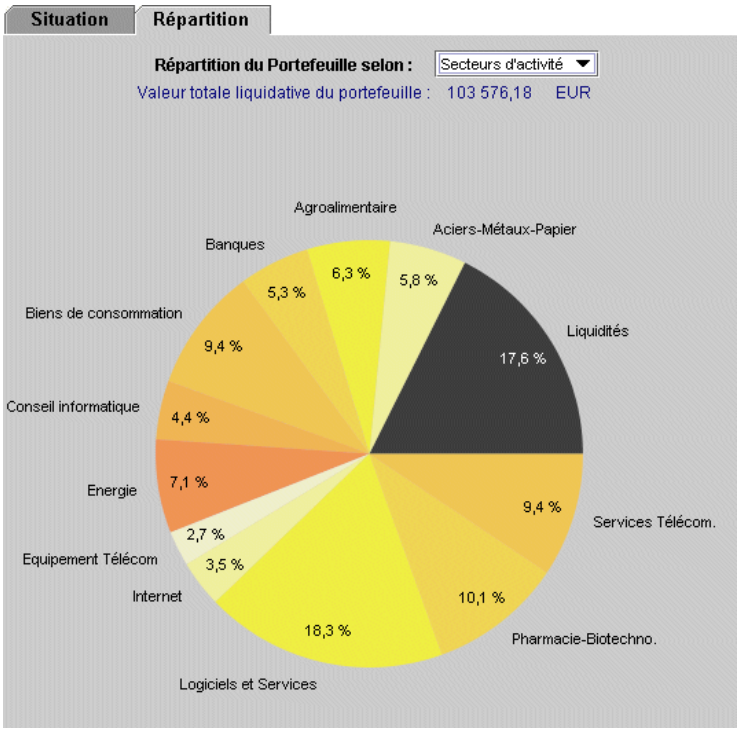
The ***Allocation*** screen presents a graphical representation of the allocation of open positions and available cash for the selected *portfolio* in three different ways depending on the choice made in the ***Portfolio Allocation*** dropdown list:

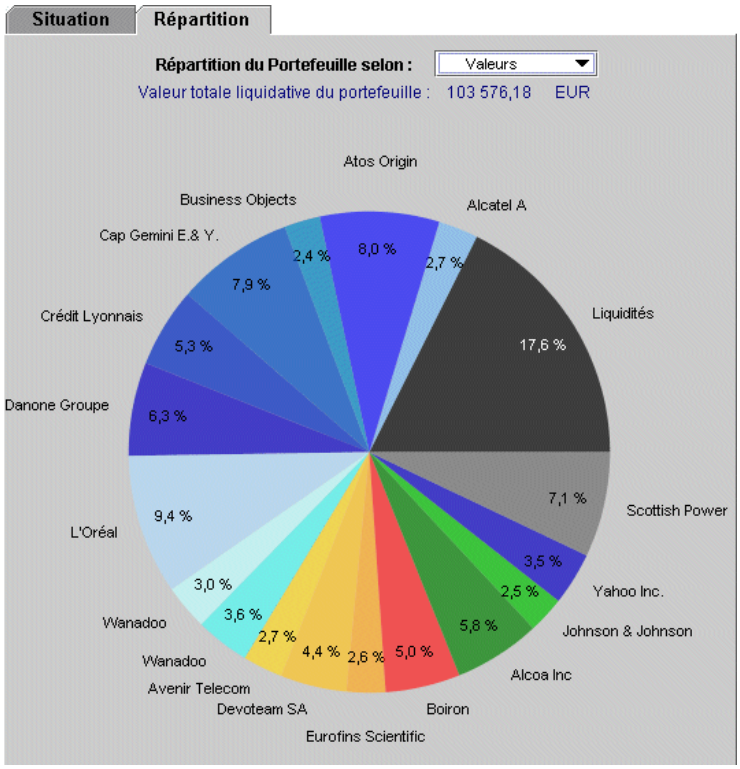
i. by market segments
ii. by industry sectors
iii. by instrument

For each elementary sector in the representation, the corresponding percentage is indicated.

11.2. Allocation examples

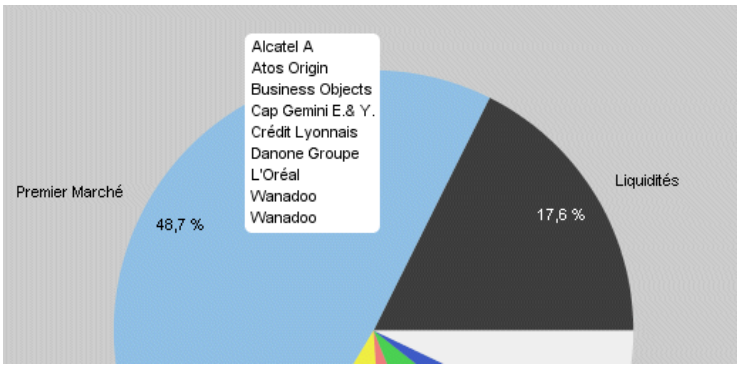






For the first two representations, by holding down the right mouse button on an elementary sector, ***Axial Finance*** adds a list of instruments present in that sector to the presentation.

For example:



12. Portfolio performance

12.1. General Information

Axial Finance presents the portfolio performance graph on the performance tab, with the evolution curve of a market index chosen by the user.

Calculation principles:

1. Performance is calculated from the date chosen by the user.
2. ***Axial Finance*** determines the minimum capital required to invest so that available cash remains positive or zero. Cash deposits and withdrawals in the *portfolio* are not taken into account for the performance calculation.
3. On each date, ***Axial Finance*** calculates the current profit, which is the sum of the *realized capital gain* and the *potential capital gain*. This current profit is compared to the minimum required capital to define the percentage of the absolute performance of the *portfolio*.
4. The annual rate of return is calculated based on this overall percentage.

12.2. Performance graph

To obtain the performance graph for the selected *portfolio*, click the **Display** button at the top right of the ***Performance*** screen.

> **Important**
>
> After each entry of a new order or modification in the *transaction journal*, you must click the **Display** button again to obtain the updated performance graph.

12.3. Comparison of performance to a market index

At the top left of the ***Performance*** screen, a dropdown list allows you to choose a market index. The display of the index curve can be disabled by unchecking the box associated with this list.

The index curve is plotted (in red) in relative value compared to the date chosen for the start of the performance calculation.

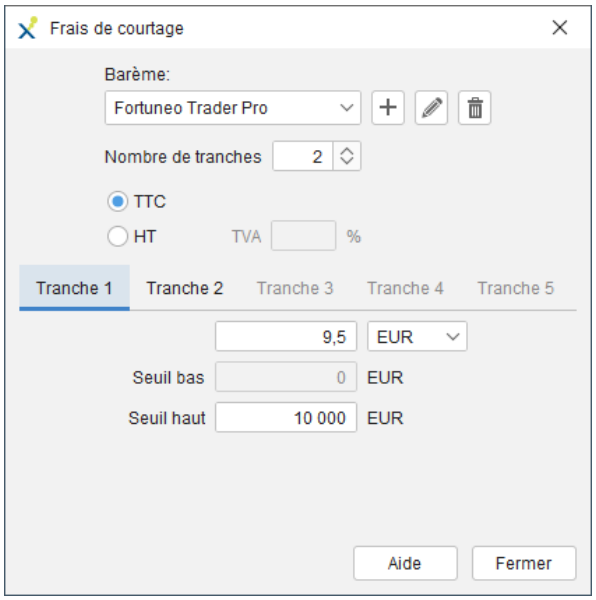
13. Fee setup

13.1. Brokerage fees

Axial Finance allows you to define the brokerage fees to be applied when recording orders. Several brokerage fee schedules can be memorized in the software. To define or modify a fee schedule, go to the general menu ***Preferences*** and choose the option ***Brokerage fees*** to open the dialog window below.

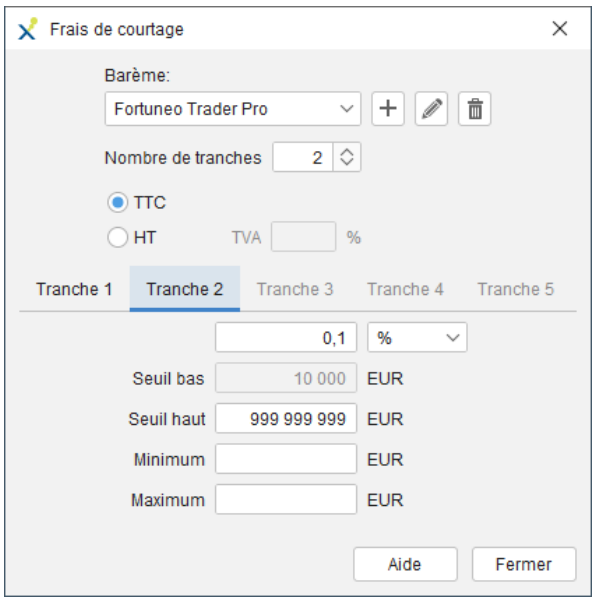
This window allows you to:

1. select a schedule, create a new schedule, or delete an existing schedule
2. define the number of tiers in the schedule
3. specify whether the schedule is HT (excl. tax) or TTC (incl. tax)



i. To create a new schedule, click the **New** button and enter the name of the schedule.
ii. To modify a schedule, select it from the dropdown list.
iii. Define the number of tiers in the schedule (up to five tiers) by entering this number in the ***Number of tiers*** field.
iv. Specify whether the schedule is HT or TTC by checking the corresponding option. Optionally, modify the VAT rate to be applied in the case of an HT schedule.

For each tier of the schedule, you must specify it by selecting the corresponding ***Tier*** tab:



i. The lower threshold and the upper threshold of the tier
ii. The unit, **%** or currency, to indicate whether fees are proportional to the total transaction amount or fixed.
iii. Optionally, specify if a minimum and maximum fee amount should be applied for the tier.

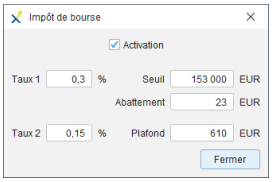
From one tier to another, ***Axial Finance*** automatically ensures consistency between the thresholds. For example, by entering the upper threshold of tier 1, the lower threshold of tier 2 will be automatically set. As a principle, the upper threshold of the last tier is set to 999,999,999.

> **Important**
>
> The selection and activation of the fee schedule to be applied to orders in a *portfolio* is performed in the ***Portfolio Management*** module, under the ***Selection*** menu of the *portfolio*.

13.2. Exchange tax

Depending on current tax legislation, ***Axial Finance*** allows you to define the stock exchange tax to be applied when recording orders.

To define or modify the calculation method for the exchange tax, go to the general menu ***Preferences*** and choose the option ***Exchange tax*** to open the dialog window below.



i. Check or uncheck the ***Activation*** box to enable or disable the automatic calculation of the exchange tax.
ii. Define the rate, the allowance, and the limit of the first taxation threshold.
iii. Define the rate and the ceiling of the second tier.

Chapter 6. Fundamental Analysis

1. General Information

1.1. Introduction

In the general menu, select the ***Fundamental Analysis*** tab.

The purpose of fundamental analysis is to analyze a company's accounts over several years in order to assess the relevance of its strategy through the resulting performance, as well as its positioning relative to its competitors. Fundamental analysis is a complement to technical analysis for medium to long-term investment purposes.

Financial data are either downloaded or entered directly by the user into the software from information available on the Internet.

Functions performed by ***Axial Finance***:

1. Memorization of the essential *financial data* from operating accounts and balance sheets.
2. Display of this *financial data* company by company and calculation of the *financial ratios* useful for assessing performance.
3. Graphical display of the *financial ratios* for lists of companies.
4. Display in a table of the *financial ratios* for companies within a market segment or the same industry, allowing for ranking *ratio* by *ratio*.

Company accounts are memorized for at least 7 fiscal years: the last four years, the current year, and the next two years.

1.2. Current Fiscal Year and Fiscal Year

The current fiscal year is defined either:

1. automatically with the downloaded *financial data*,
2. by the user using the two navigation buttons present at the bottom of the company-by-company account display screen.

The closing month of the accounts (a number from 1 to 12) is present and modifiable in the company-by-company account display screen.

Axial Finance has adopted the convention that any accounting year closing on or before June 30 is assigned to the previous fiscal year. Thus, a company's accounting year ending on June 30, 2002, will be assigned to fiscal year 2001. Conversely, accounts closing on July 31, 2002, will be assigned to fiscal year 2002.

The user can decide at any time the value of the fiscal year that should correspond to the current year using one of the two buttons below:

Go to next «

Generally, for years closing on December 31, the definitive accounts from the previous year are not known before spring. Consequently, for better accuracy of the *financial ratios* presented in the graphical summary, it is more useful to retain the previous year as the current fiscal year for a few more months. It is advisable to wait for the publication of accounts or to have credible forecasts for the new fiscal year before changing the current year.

Return to the previous » In certain specific cases, it may be necessary to go back for the current fiscal year.

1.3. Using the Notepad

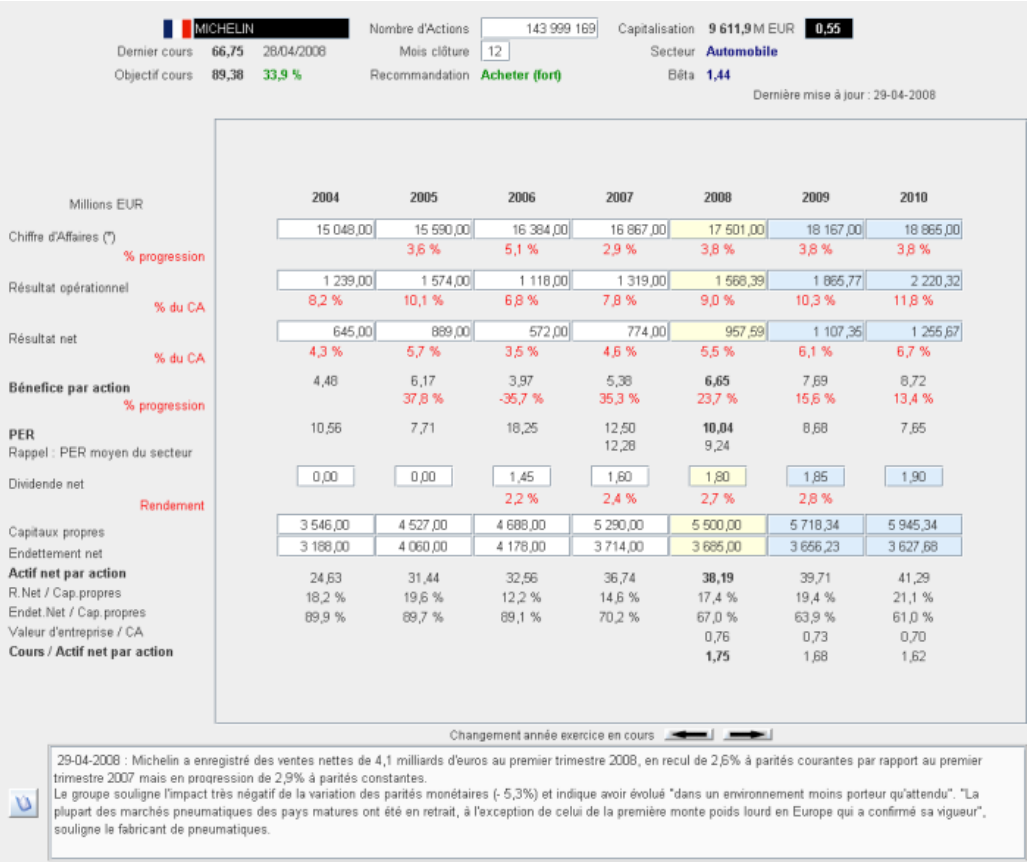
For each company, ***Axial Finance*** provides a notepad (2000 character maximum) to allow the user to record any information deemed useful.

The user can enter information obtained from the Internet using the copy/paste function.

2. Company Accounts

2.1. Description of the company financial data screen

The selection of a company is made from the software's *stock list*. The ***Financial Data*** screen detailing a company's accounts, shown below, comprises three main parts:



1. The top banner with:
   - the company name
   - the ***Last price*** and date
   - the ***Number of shares*** for the current fiscal year
   - the market ***Capitalization*** and the *ratio* of capitalization (capitalization/revenue) for the current fiscal year
   - the company's ***Sector*** of activity
   - the account closing ***Month***
   - the fundamental analysis price ***target*** with the potential variation in % compared to the current price

- the ***Recommendation*** according to fundamental analysis
- the value of the ***Beta***
- the date of the company's account update

2. The main central zone displaying the detail of accounts over 7 fiscal years:
   - the four previous fiscal years (columns with a white background)
   - the current fiscal year (column with a light yellow background)
   - the next two fiscal years (columns with a light blue background)
3. The bottom part with:
   - a button for direct access to the fundamental analysis chapter of the user manual
   - the notepad for the selected company

2.2. Year-by-year account presentation

For each year, the table presents basic data (which can potentially be modified by the user) and data calculated from the former:

1. the ***Revenue***
2. the ***% growth*** of revenue between two fiscal years
3. the ***Operating result***
4. the ***% of Revenue***, i.e., the percentage of operating result over revenue
5. the ***Net income***
6. the ***% of Revenue***, i.e., the percentage of net income over revenue
7. the ***Earnings Per Share (EPS)***
8. the ***% growth*** of earnings per share between two fiscal years
9. the ***P/E***, i.e., the "Price-Earnings Ratio"
10. the average ***Sector P/E***
11. the ***Net dividend***
12. the ***Yield***, i.e., the division of net dividend by the last price
13. the ***Equity***
14. the ***Net debt***
15. the ***Net asset per share*** (for the last three fiscal years)
16. the *ratio* (in %) of ***Net income to Equity***
17. the *ratio* (in %) of ***Net debt to Equity***
18. the *ratio* ***Enterprise Value to Revenue*** (for the last three fiscal years)
19. the *ratio* ***Last price to Net asset per share*** (for the last three fiscal years) with specific red marking if this *ratio* is less than 1, signifying a company discount

2.3. Sectors of activity

For fundamental analysis, ***Axial Finance*** performs a specific classification of companies into approximately fifty sectors. These sectors have been refined compared to classic classifications so that comparisons of instruments within the same sector are as consistent as possible.

2.4. Price target and potential variation

The horizon for this target is 12 to 18 months. The calculation of this target is based on the **Whitbeck and Kisor** model, which has been adapted for the fundamental analysis module. This target is followed by the percentage of achievable progression relative to the stock price at the date of the recommendation.

2.5. Recommendation

Several criteria are taken into account to determine the recommendation decision.

In particular:

1. ***P/E*** lower or higher than the average P/E of the industry sector
2. ***Net income/Revenue*** higher or not compared to the sector
3. ***Net income/Equity*** higher or not compared to the sector
4. ***Revenue growth*** higher or not compared to the sector
5. ***Yield*** higher or not compared to the sector
6. ***EPS growth*** higher or not compared to the sector
7. *Ratio* ***Enterprise Value/Operating result*** higher or not compared to the sector
8. Bonus granted to the instrument in case of a discount relative to its equity

Three types of recommendations are issued for the instruments actually selected:

Buy	The instrument meets all criteria of the fundamental analysis module and possesses a potential appreciation between 10 and 15%, relative to the price at the date of the recommendation
Strong Buy	The instrument meets all criteria of the fundamental analysis module and possesses a potential appreciation greater than 15%, relative to the price at the date of the recommendation
Avoid or Sell	The instrument does not meet the criteria or has no potential for appreciation

2.6. Average Sector P/E

The ***Average Sector P/E*** includes most companies in the sector (all segments combined), and not only the SRD stocks of that sector.

2.7. Beta factor

The ***beta*** determines the sensitivity of a stock's price relative to the benchmark index. The ***beta*** is characterized by the ratio between the covariance of the stock's profitability with that of the benchmark index (CAC 40), and the variance of the benchmark index's profitability.

The ***beta*** is a risk indicator:

- A stock with a beta close to 1 will fluctuate with the index.
- In the event of an index decline, a stock with a beta lower than 1 is likely to decline less than the index (if the index falls by 1%, a stock with a beta of 0.75 is likely to fall by 0.75%).
- A beta can be negative: in this case, any rise in the index is likely to imply a decline in the stock's price (and vice versa).

2.8. Company Discount

When the *ratio* ***Price/Net asset per share*** is less than 1, the stock is considered discounted. In this case, for the current fiscal year, this *ratio* is displayed in bold white characters on a red background.

2.9. Net Debt

The ***net debt*** is equal to the difference between financial debts (short-term and long-term) and cash plus financial investments.

2.10. Net asset per share

The ***Net asset per share*** is equal to equity divided by the number of shares.

2.11. Enterprise Value / Revenue

The ***enterprise value*** (EV) is the sum of market capitalization and net debt. The *ratio* ***EV/Revenue*** (like the ***P/E***) is an indicator of the stock's cheapness.

3. Ratios Chart

3.1. General Information

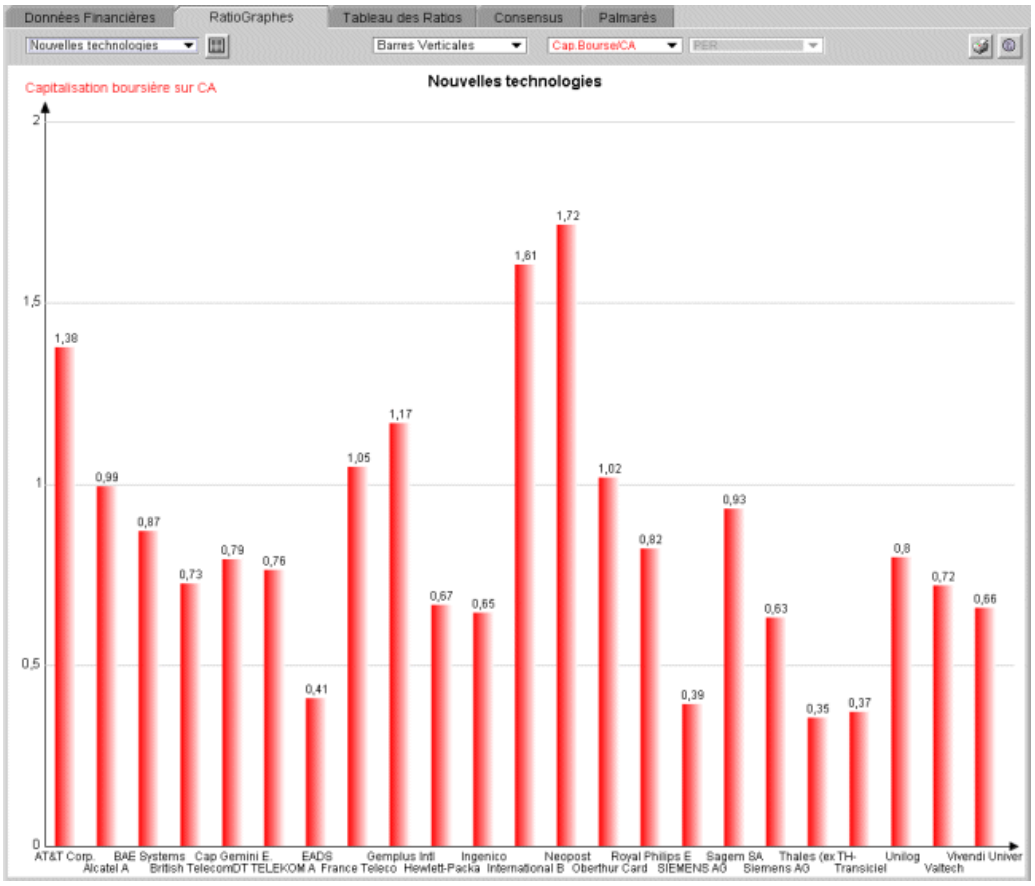
From the *financial data* recorded in the software, ***Axial Finance*** establishes several types of charts for companies in a list of stocks, allowing for the assessment of the main *ratios* used in fundamental analysis.

Nine *ratios* are thus represented:

- ***Market capitalization/Revenue***
- ***Price-Earnings Ratio*** (P/E)
- ***Earnings Per Share (EPS)***
- ***Profitability*** (Net income/Revenue)
- ***EPS Variation*** between the current fiscal year and the next projected fiscal year
- ***Last price/Net asset per share***
- ***Enterprise Value/Revenue***
- ***Net income/Equity***
- ***Net debt/Equity***

3.2. Description of the ratios chart

The screen shown below comprises:

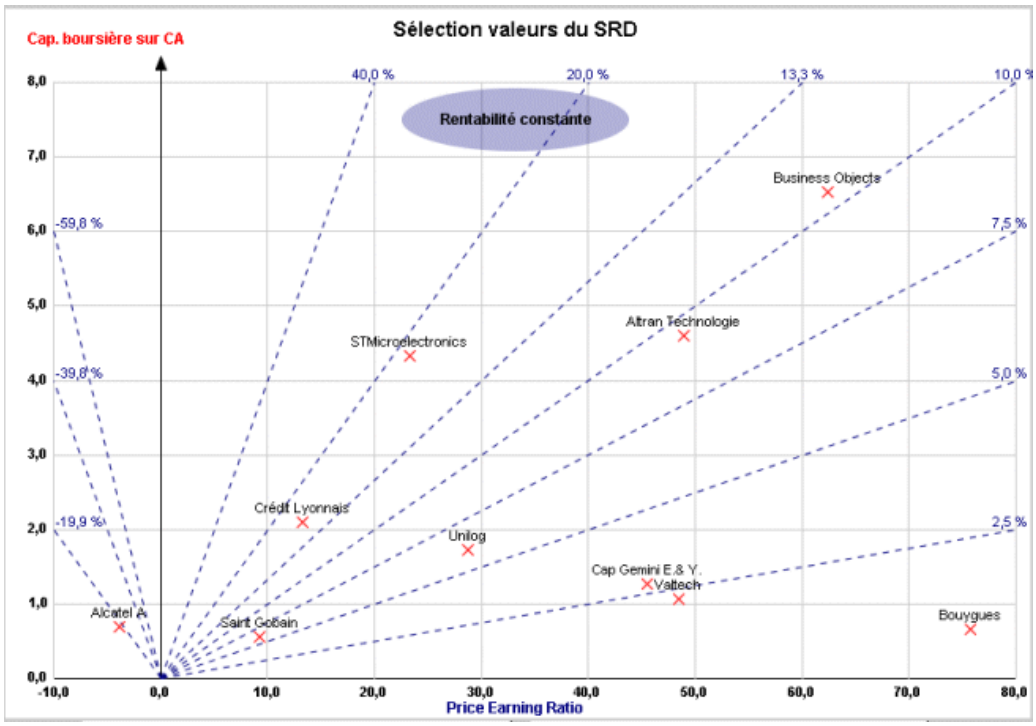


1. at the top, the selection zone for the chart display mode, with from left to right:
   - the drop-down list for selecting the list of companies to display
   - the drop-down list for selecting the chart type: as *vertical bars*, as *X,Y points*, or as *bars and curves*
   - the drop-down list for selecting the *financial ratio* on the left vertical axis
   - the drop-down list for selecting the *financial ratio*, on the horizontal axis or on the right vertical axis depending on the chart type
   - the button to trigger the print preview
   - the button to display useful information for this screen
2. in the center, the chart with the chosen *ratios*

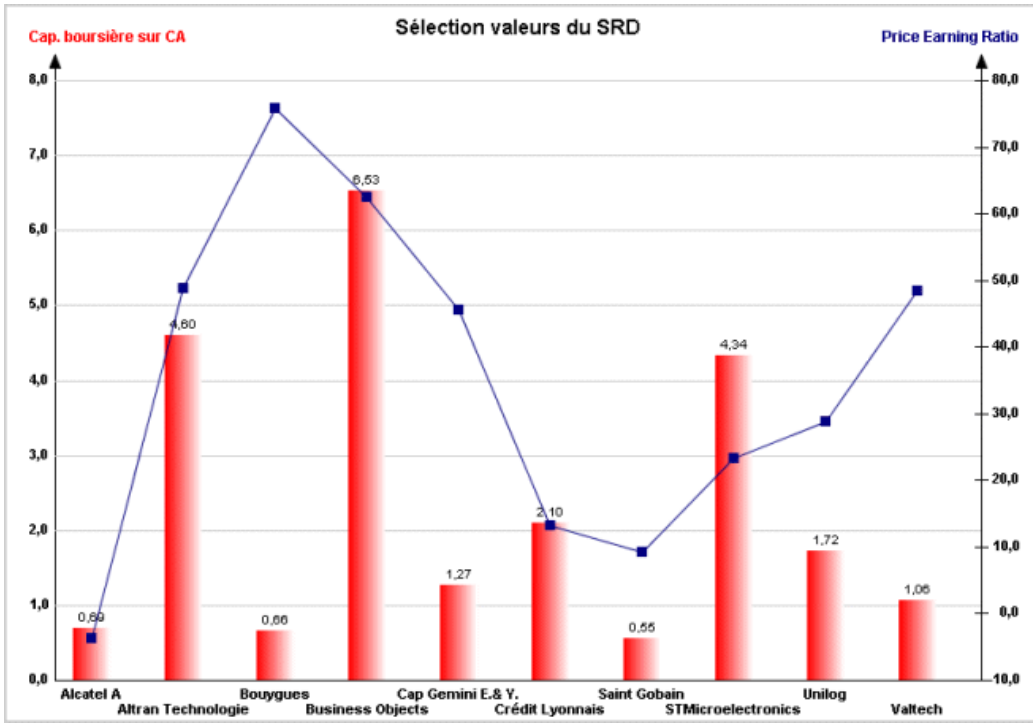
3.3. Chart Types

Three types of ratio chart are available:

1. ***Type 1***: A chart with *vertical bars* to represent a single *ratio*. The companies in the selected list are distributed along the horizontal axis (see example above).
2. ***Type 2***: A chart with *X,Y points* to simultaneously represent two different *ratios*. The companies in the selected list are dots.



3. ***Type 3***: A mixed chart with vertical bars and a curve to represent two different *ratios*. The companies in the selected list are distributed along the horizontal axis. The left vertical axis corresponds to the first *ratio* and the right vertical axis to the second *ratio*.



The choice of chart type as well as the choice of *ratios* on the axes are made using the drop-down lists located at the top and center of the screen:

- The drop-down list in red characters defines the *ratio* to be displayed on the left vertical axis
- The drop-down list in blue characters, activated only for ***types 2 and 3***, defines the *ratio* to be displayed:
  - on the horizontal axis in the case of ***type 2***
  - on the right vertical axis in the case of ***type 3***

3.4. Nature of calculated ratios

Each *ratio* is calculated as follows:

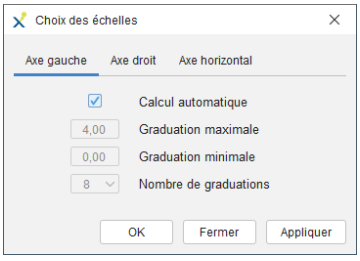
Market capitalization/Revenue	(Last price)*(Number of shares for the current fiscal year)/(Revenue of the current fiscal year)
P/E	P/E of the current fiscal year = Last price / Earnings Per Share of the current fiscal year
EPS	Earnings per share after adjustments in euros for the current fiscal year
Profitability	Net income attributable to the group of the current fiscal year over Revenue of the current fiscal year
EPS Evolution	% variation of Earnings Per Share from the next fiscal year compared to the Earnings Per Share of the current fiscal year
Price/Net asset per share	Last price over Net book value per share of the current fiscal year
Enterprise Value/Revenue	Current enterprise value (i.e.: current market capitalization plus net debt of the current fiscal year) over Revenue of the current fiscal year
Net Income/Equity	Net income attributable to the group of the current fiscal year over Equity of the previous fiscal year
Net Debt/Equity	Net debt of the current fiscal year over Equity of the previous fiscal year)

Note

For stocks quoted in USD or GBP, the exchange rate used for presenting Earnings Per Share in Euros is the one set in the Portfolio Management module.

3.5. Chart Scales

Axial Finance automatically determines the scales on the axes based on the magnitude of the *ratios*. However, the user can also fix the scales according to their own needs via the following procedure:



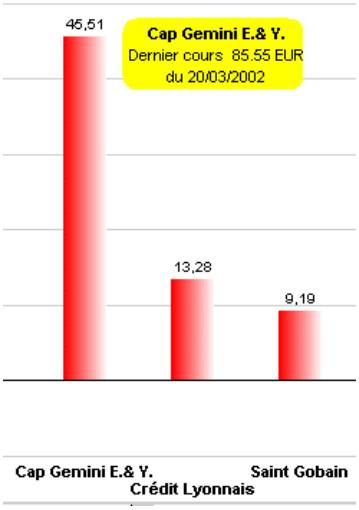
i. Position the mouse over the horizontal or vertical axis. The cursor arrow changes into a hand.
ii. Double-click with the left mouse button to open the dialog window shown here.
iii. Select the tab for the axis scale you wish to modify.
iv. Uncheck the ***Automatic Scale*** box.
v. Define the maximum graduation of the axis.
vi. Define the minimum graduation of the axis.
vii. Choose the number of graduations between the two extreme values using the drop-down list.
viii. Click the **OK** button to return to the chart, or click the **Apply** button to modify another axis scale afterwards.

To return to an automatic scale, check the corresponding box for the axis again.

3.6. Additional information available on charts

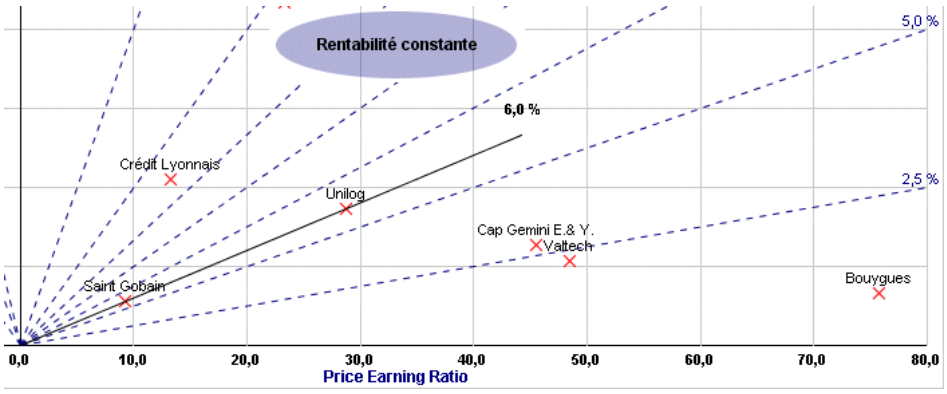
3.6.1. Verification of the last stock price

By holding down the left mouse button on a bar in the chart (for ***types 1 and 3***) or on an X,Y point (for ***type 2***), a yellow box appears indicating the last recorded price and date. This information allows for verifying the stock price actually used for the calculation of the *ratios*.



3.6.2. Specific charts of type 2

In the case of ***type 2*** charts, when the first *ratio* selected is ***Market capitalization/Revenue*** and the second *ratio* is ***P/E***, a *Constant Profitability* label is added to the chart to indicate that the lines starting from the origin are loci of constant profitability. A scale of profitability percentages is displayed at the top and right of the chart. By holding down the left mouse button on any part of the chart, you obtain the trace of the constant profitability line reaching that point with the precise indication of the profitability percentage (see example below).

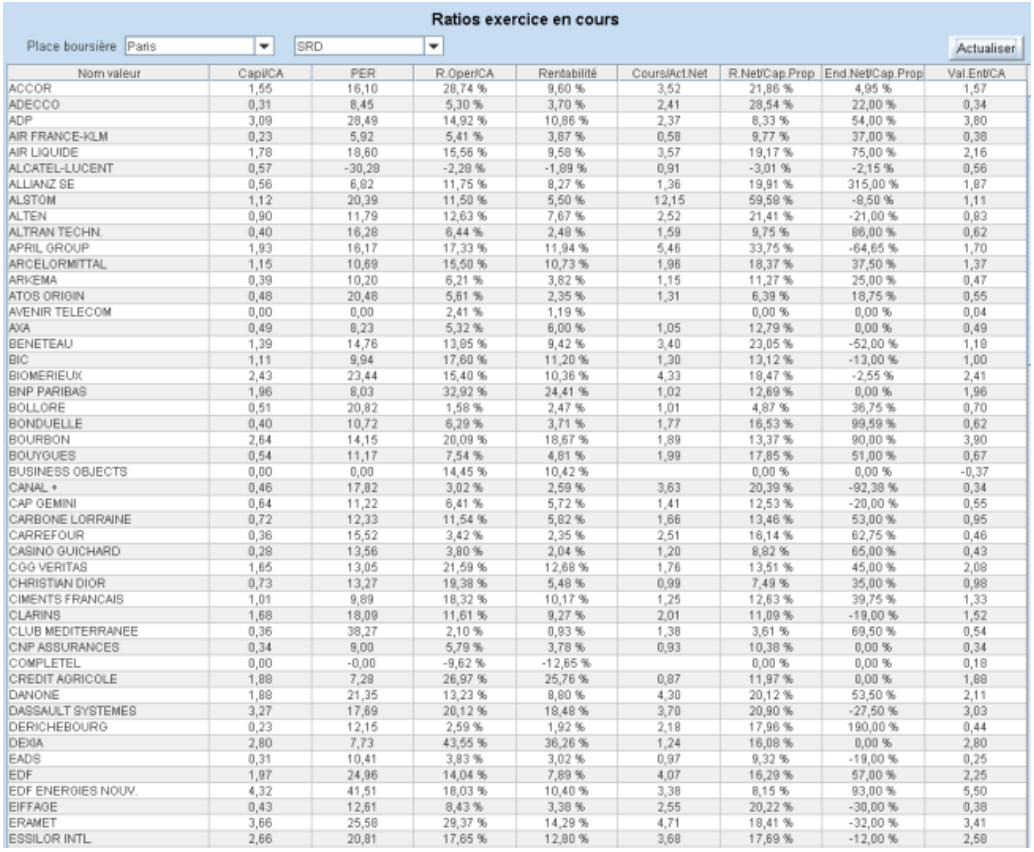


Conversely, when the first *ratio* selected is ***Market capitalization/Revenue*** and the second *ratio* is ***profitability***, a *Constant P/E* label is added to the chart to indicate that the lines starting from the origin are loci of constant P/E. A scale providing ***P/E*** values is displayed at the top and right of the chart.

4. Financial Ratios Table

4.1. Description

The ***Financial Ratios*** table presents the situation of a list of companies according to the seven *financial ratios* defined above.



Ratios exercice en cours

Place boursière: Paris | SRD | Actualiser

Nom valeur	Capi/CA	PER	R.Oper/CA	Rentabilité	Cours/Act.Net	R.Net/Cap.Prop	End.Net/Cap.Prop	Val.Ent/CA
ACCOR	1,55	16,10	28,74 %	9,60 %	3,52	21,86 %	4,95 %	1,57
ADECCO	0,31	8,45	5,30 %	3,70 %	2,41	28,54 %	22,00 %	0,34
ADP	3,09	28,49	14,92 %	10,86 %	2,37	8,33 %	54,00 %	3,80
AIR FRANCE-KLM	0,23	5,92	5,41 %	3,87 %	0,58	9,77 %	37,00 %	0,38
AIR LIQUIDE	1,78	18,60	15,56 %	9,58 %	3,57	19,17 %	75,00 %	2,16
ALCATEL-LUCENT	0,57	-30,28	-2,28 %	-1,89 %	0,91	-3,01 %	-2,15 %	0,56
ALLIANZ SE	0,56	6,82	11,75 %	8,27 %	1,36	19,91 %	315,00 %	1,87
ALSTOM	1,12	20,39	11,50 %	5,50 %	12,15	59,58 %	-8,50 %	1,11
ALTEN	0,90	11,79	12,63 %	7,67 %	2,52	21,41 %	-21,00 %	0,83
ALTRAN TECHN.	0,40	16,28	6,44 %	2,48 %	1,59	9,75 %	86,00 %	0,62
APRIL GROUP	1,93	16,17	17,33 %	11,94 %	5,46	33,75 %	-64,65 %	1,70
ARCELORMITTAL	1,15	10,69	15,50 %	10,73 %	1,96	18,37 %	37,50 %	1,37
ARKEMA	0,39	10,20	6,21 %	3,82 %	1,15	11,27 %	25,00 %	0,47
ATOS ORIGIN	0,48	20,48	5,61 %	2,35 %	1,31	6,39 %	18,75 %	0,55
AVENIR TELECOM	0,00	0,00	2,41 %	1,19 %		0,00 %	0,00 %	0,04
AXA	0,49	8,23	5,32 %	6,00 %	1,05	12,79 %	0,00 %	0,49
BENETEAU	1,39	14,76	13,95 %	9,42 %	3,40	23,05 %	-52,00 %	1,18
BIC	1,11	9,94	17,60 %	11,20 %	1,30	13,12 %	-13,00 %	1,00
BIOMERIEUX	2,43	23,44	15,40 %	10,36 %	4,33	18,47 %	-2,55 %	2,41
BNP PARIBAS	1,96	8,03	32,92 %	24,41 %	1,02	12,69 %	0,00 %	1,96
BOLLORE	0,51	20,82	1,58 %	2,47 %	1,01	4,87 %	36,75 %	0,70
BONDUELLE	0,40	10,72	6,29 %	3,71 %	1,77	16,53 %	99,59 %	0,62
BOURBON	2,64	14,15	20,09 %	18,67 %	1,89	13,37 %	90,00 %	3,90
BOUYGUES	0,54	11,17	7,54 %	4,81 %	1,99	17,85 %	51,00 %	0,67
BUSINESS OBJECTS	0,00	0,00	14,45 %	10,42 %		0,00 %	0,00 %	-0,37
CANAL +	0,46	17,82	3,02 %	2,59 %	3,63	20,39 %	-92,38 %	0,34
CAP GEMINI	0,64	11,22	6,41 %	5,72 %	1,41	12,53 %	-20,00 %	0,55
CARBONE LORRAINE	0,72	12,33	11,54 %	5,82 %	1,66	13,46 %	53,00 %	0,95
CARREFOUR	0,36	15,52	3,42 %	2,35 %	2,51	16,14 %	62,75 %	0,46
CASINO GUICHARD	0,28	13,56	3,80 %	2,04 %	1,20	8,82 %	65,00 %	0,43
CGG VERITAS	1,65	13,05	21,59 %	12,68 %	1,76	13,51 %	45,00 %	2,08
CHRISTIAN DIOR	0,73	13,27	19,38 %	5,48 %	0,99	7,49 %	35,00 %	0,98
CIMENTS FRANCAIS	1,01	9,89	18,32 %	10,17 %	1,25	12,63 %	39,75 %	1,33
CLARINS	1,68	18,09	11,61 %	9,27 %	2,01	11,09 %	-19,00 %	1,52
CLUB MEDITERRANEE	0,36	38,27	2,10 %	0,93 %	1,38	3,61 %	69,50 %	0,54
CNP ASSURANCES	0,34	9,00	5,79 %	3,78 %	0,93	10,38 %	0,00 %	0,34
COMPLETEL	0,00	-0,00	-9,62 %	-12,65 %		0,00 %	0,00 %	0,18
CREDIT AGRICOLE	1,88	7,28	26,97 %	25,76 %	0,87	11,97 %	0,00 %	1,88
DANONE	1,89	21,35	13,23 %	8,80 %	4,30	20,12 %	53,50 %	2,11
DASSAULT SYSTEMES	3,27	17,69	20,12 %	18,48 %	3,70	20,90 %	-27,50 %	3,03
DERICHEBOURG	0,23	12,15	2,59 %	1,92 %	2,18	17,96 %	190,00 %	0,44
DEXIA	2,80	7,73	43,55 %	36,26 %	1,24	16,08 %	0,00 %	2,80
EADS	0,31	10,41	3,83 %	3,02 %	0,97	9,32 %	-19,00 %	0,25
EDF	1,97	24,96	14,04 %	7,89 %	4,07	16,29 %	57,00 %	2,25
EDF ENERGIES NOUV.	4,32	41,51	18,03 %	10,40 %	3,38	8,15 %	93,00 %	5,50
EIFFAGE	0,43	12,61	8,43 %	3,38 %	2,55	20,22 %	-30,00 %	0,38
ERAMET	3,66	25,58	29,37 %	14,29 %	4,71	18,41 %	-32,00 %	3,41
ESSILOR INTL	2,66	20,81	17,65 %	12,80 %	3,68	17,69 %	-12,00 %	2,58

This table indicates for each company:

- The *ratio* ***Market capitalization/Revenue*** .
- The ***Price-Earnings Ratio*** (P/E).
- The *ratio* ***Operating result/Revenue*** in %.
- The *ratio* of ***profitability***, Net income/Revenue in %.
- The *ratio* ***Last price/Net asset per share***.
- The *ratio* ***Net income/Equity*** in %.
- The *ratio* ***Net debt/Equity*** in %.
- The *ratio* ***Enterprise Value/Revenue***.

When the numerator and denominator of the *ratio* to be calculated are zero, the field for the *ratio* in the table remains empty. When only the denominator of the *ratio* is zero, the field for the *ratio* in the table indicates the infinity symbol.

4.2. Sorting and ranking according to ratio values

Initially, companies are ranked in the table in alphabetical order.

To rank the companies in the table based on the relative importance of one of the seven *ratios* :

i. Choose from the table the column for the *ratio* by which the ranking should be performed.
ii. Click once on the column header: The ranking of companies is performed in ascending order of the *ratio*.
iii. Click a second time on the header: The ranking is performed in reverse order (and so on with each new click).

Chapter 7. Trading Systems

1. General Information

1.1. Introduction

The purpose of a *trading system* is to define a buying and selling strategy based on conditions established from *technical indicators*, and to test its profitability on historical prices to derive the decision rules to be applied in the future.

This approach is based on the postulate that in the future, prices will generally exhibit the same behaviors as they did in the past. This is partially true, but with two important remarks:

- The profitability of a strategy can change significantly after certain periods. It is therefore necessary to verify it regularly to determine if the buying and selling conditions are still current or if they deserve to be revised.
- Instruments do not all behave the same way. Therefore, good strategies are not suitable for all instruments.

Axial Finance allows for the simple design of even complex strategies, analyzing their profitability and loss risks in detail, comparing them with each other, and identifying the instruments for which they are best suited.

1.2. Definition of important terms

This chapter frequently uses the following terms, which should be understood as follows:

Bar	The time unit of a chart. For example, in a daily chart, a *bar* represents one trading session. In a 5-minute intraday chart, the *bar* represents a 5-minute time unit.
Indicator	A numerical function evolving over time (*bar* after *bar*) representable graphically by a curve. *Technical indicators* are *indicators* specifically developed for technical analysis.
Signal	An elementary TRUE or FALSE condition, determined at each *bar* based on the use of *indicators*. Example of a *signal*: "The closing price crosses above a Moving Average".
Rule	A logical combination of *signals*, defining a complex condition evaluated as TRUE or FALSE. A *signal* can be considered a simple *rule* composed of a single condition.
Stop	A position closing condition that takes priority over the closure *rule* if one is present. For example, a *stop* for closing a position when the loss recorded since the opening of the position exceeds a certain threshold.
Modalities	The set of *modalities* allowing the evaluation of a *strategy*'s profitability. For example, the initial stake, the maximum number of shares per trade, etc.
Strategy	A *strategy* is characterized by its opening and closing *rules*, potentially by *stop* conditions, and by its *modalities* for evaluating results.
Long position	A position is said to be "long" when it is opened by buying shares and closed by selling those shares.
Short position	A position is said to be "short" when it is opened by the short sale of shares and closed by repurchasing those shares.
Backtesting	The operation consisting of applying a *strategy* to a historical price series.
Equity curve	The *bar* by *bar* value of the capital invested starting from an initial stake resulting from the application of a *strategy*.
Drawdown	The eventual loss recorded upon position closure. The *maximum drawdown* defines the maximum loss recorded during various trades. The *maximum drawdown* therefore measures the maximum risk of loss of a *strategy*.

1.3. Implementation

The set of operations that can be performed in the implementation of *trading systems* are as follows:

1. Programming *personal indicators* using the universal programming language **JavaScript** for use in *signals*
2. Programming of *signals* using the universal programming language **JavaScript** for use in *rules*
3. Designing *rules* for buying and selling to be used in *strategies* or in market ***screening*** (in which case we speak of a *screening rule*)
4. Designing trading *strategies* and performing *backtesting* on a price chart (daily or intraday).
5. Displaying the *equity curve* in a *chart window* of the ***Market Tracking*** area along with position opening and closing *signals*
6. Displaying the *drawdown* in the chart
7. Displaying *equity curves* in the ***Strategy Screen*** module as an alternative to ***Market Tracking***. ***Strategy Screen*** allows for the simultaneous calculation and display of results:
   - of the same *strategy* applied to a list of stocks
   - of a list of *strategies* applied to the same stock
   - a single *strategy* applied to a stock while varying certain parameters of the *rules* step by step
8. Selecting the vertical scale of the *equity curve* in monetary amount or as a relative percentage of gain/loss
9. Selecting the presentation of the *equity curve* with or without the potential variations during position opening
10. Presenting the detailed result of a *strategy* with a global summary, the list of open positions, and the values of the *equity curve*
11. Presenting in a summary table the full set of results for all executed *strategies*
12. Exporting and importing software *personal indicators*, *signals*, and *strategies*
13. Exporting open positions of a *strategy* and the *equity curve* to an Excel file.

2. Creating strategies

2.1. Generalities

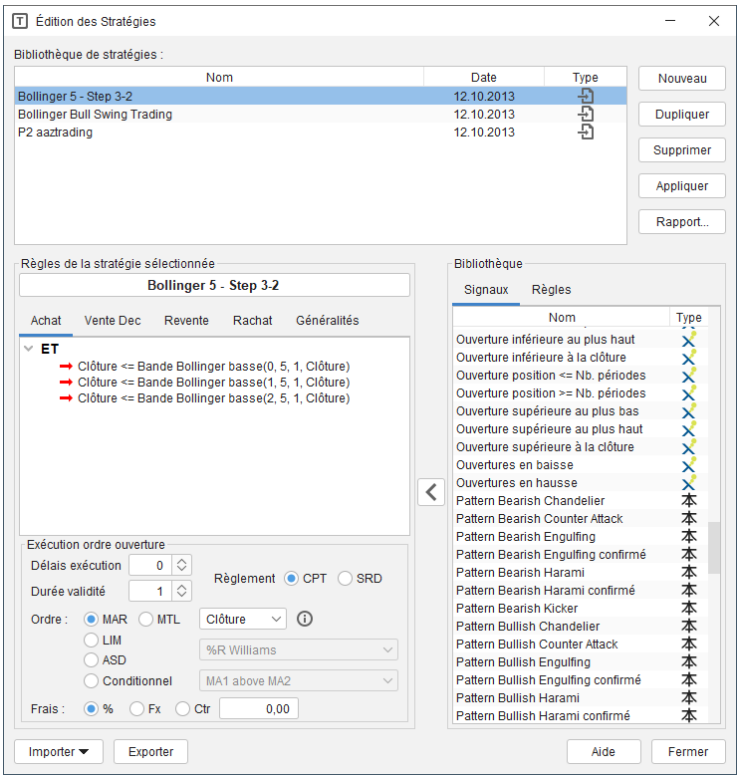
A *strategy* is defined by:

- its opening and closing position *rules*
- eventually position closing *stop* conditions
- its *modalities* for evaluating profitability

> **Important**
>
> Before creating a *strategy*, ensure that all *signals* and *rules* necessary for defining the opening and closing conditions exist in the library. If not, begin by defining them as explained in the paragraphs below: Indicator Programming and Signal Programming.

2.2. Creation

To create or modify a *strategy*, in the general ***Trading System*** menu, choose the ***Strategies*** option to open the editing window:



The editing window comprises three parts:

1. At the top, the list of *strategies* in the library and to its right the buttons **New**, **Copy**, **Delete**, **Apply**, and **Report...**
2. In the center left, an area with a tab box, displaying for the *strategy* selected in the library above:
   - The name
   - In the ***Buy*** tab: the "long" opening *rule* with order execution conditions
   - In the ***Short Sale*** tab: the "short" opening *rule* with order execution conditions
   - In the ***Sell*** tab: the "long" closing *rule* with order execution conditions
   - In the ***Cover*** tab: the "short" closing *rule* with order execution conditions
   - In the ***General*** tab: the *modalities* of the order (initial stake, number of shares per order, etc.)
3. In the center right, the list of *signals* and *rules* in the library for composing the opening and closing *rules* of the *strategy*.

By clicking on the **New** button, a new *strategy* is added to the library under the temporary name "(New)". Enter the name of this *strategy* in this field and then define the *rules*, execution conditions, and *modalities* as explained below.

2.3. Creation of position opening and closing rules

A *strategy* can include:

- Two *rules*: long opening and long closing
- Two *rules*: short opening and short closing
- Four *rules*: long opening, long closing, short opening, and short closing

To each *rule*, execution conditions are associated, just as when placing an order with a broker.

The procedure for creating a *rule* is identical to that described in the paragraph Creation and editing of rules.

Then for each *rule*:

2.3.1. Defining the root condition

Each *rule* must start with an initial condition called the *root condition*. By default, this condition is an ET (AND in Boolean logic).

To replace the *root condition* AND with an OR, right-click on the *root condition* icon ET to open the context menu and choose the option ***Replace AND with OR***.

Proceed inversely with ***Replace OR with AND***.

2.3.2. Inserting a signal

To add a *signal* to the *root condition* or to any other condition ET or OU of the *rule*:

i. Right-click on the condition icon and open the context menu, then choose the option ***Add signal***. A red horizontal arrow ➡ ... prefiguring the place of the *signal* is inserted below.
ii. Select this red arrow by clicking on it.
iii. To subsequently insert a *signal* from the library, two methods are available:
   i. select the *signal* from the list and click on the button <
   ii. or drag this *signal* with the left mouse button, hold it, and release the mouse button over the red arrow.

2.3.3. Parameterizing a signal

To parameterize a new *signal* added by the previous method, or to modify the parameters of an existing *signal*:

i. Double-click on the *signal* in the graphical representation of the *rule* to open the parameter entry window.
ii. Define the various parameters and then click the **OK** button.

2.3.4. Changing a signal

To replace a *signal* in the *rule* with another *signal* from the library:

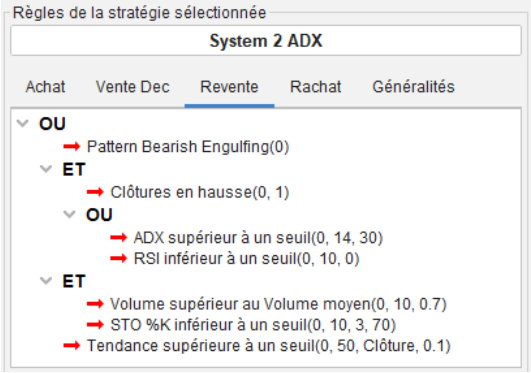
i. Select the *signal* to be replaced by clicking on it in the graphical representation of the *rule*.
ii. Then, two methods are available:
   A. Select the new *signal* from the library and click on the button <
   B. or drag this *signal* with the left mouse button, hold it, and drop the pointer over the arrow in the graphical representation.

2.3.5. Adding AND / OR conditions

The addition of an **AND** or **OR** condition is performed from the position of a *signal* in the graphical representation at the logical location (in terms of Boolean logic) of the future condition.

i. Select the *signal* that is at the logical position of the condition to be added.
ii. Click on the arrow of this *signal* and then open the context menu by right-clicking it.
iii. Depending on the case, choose the option ***Replace with OR*** or ***Replace with AND***.

Example of constructing a complex *rule*:



2.3.6. Replacing an AND / OR condition

To replace one condition with another condition:

i. Click on the image of this condition and then open the context menu by right-clicking it.
ii. Depending on the case, choose the option ***Replace with OR*** or ***Replace with AND***.

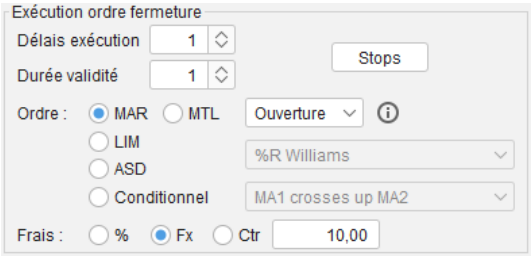
2.3.7. Deleting a signal or a condition

i. Click on the image of this condition or *signal* and then open the context menu by right-clicking it.
ii. Choose the option ***Cancel***.

Deleting a condition deletes all *signals* and other conditions included in that condition.

2.4. Defining execution conditions

For each position opening and closing order, precise execution conditions can be set:



2.4.1. Execution delay

The order can be executed on the *bar* of the *signal* or on a subsequent *bar*. Thus, in a daily chart, to execute an order the next day, one displays the value 1 for the execution delay, otherwise 0 for immediate execution.

2.4.2. Validity duration

When an order is initialized after a *signal*, its execution depends on the execution condition depending on the type of order. Depending on the case, execution can be immediate or deferred in waiting for the realization of the condition. The validity duration defines the number of *bars* during which the initialized order can be executed; otherwise, if this delay is exceeded, the order will be cancelled.

A validity delay equal to 1 in an ongoing "end of day" chart means that the order can only be executed for one single day.

2.4.3. Order type

Axial Finance allows choosing between the following four order types, which are generally available at brokers:

Market the order will be executed immediately at the price of the *bar* defined in the associated drop-down list: *Open*, *Close*, etc.

Best Limit (ML) To define the best limit price, one chooses from the associated drop-down list a technical indicator that calculates this limit price at the execution *bar*. For example, to set the limit price at 1% below the opening price of the *bar*, it is sufficient to create an *indicator* performing this calculation, which is then selected in the drop-down list.

Stop Limit (ASD) To define the trigger threshold price, one chooses from the associated drop-down list a *indicator* that calculates this trigger price at the execution *bar*. For example, to set the trigger price at 2% above the opening price of the *bar*, it is sufficient to create an *indicator* performing this calculation, which is then selected in the drop-down list.

Conditional A more complex execution condition can be defined, for example, if the price goes above the 30-period moving average. One creates in the library the *rule* corresponding to the desired condition, which is then selected from the associated drop-down list of the condition.

2.4.4. Brokerage fees

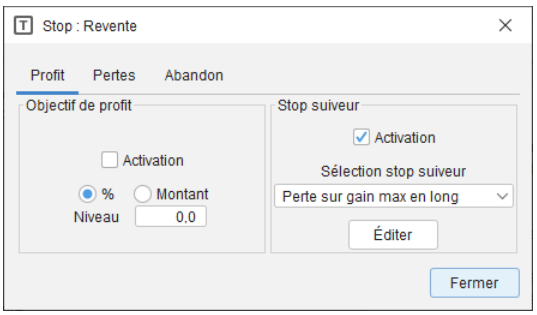
Brokerage fees can be defined in three different ways:

% as a percentage of the order amount.
Fx as a fixed amount per order.
Ctr as a fixed amount per number of shares (or contracts).

2.5. Definition of stop conditions

Independently of the position closing conditions defined in the *rules*, ***Axial Finance*** allows deciding without waiting for the closure of a "long" or "short" position in certain specific situations.

To program these situations, click on the **Stops** button to open the dialog box. Seven types of *stop* can be activated:

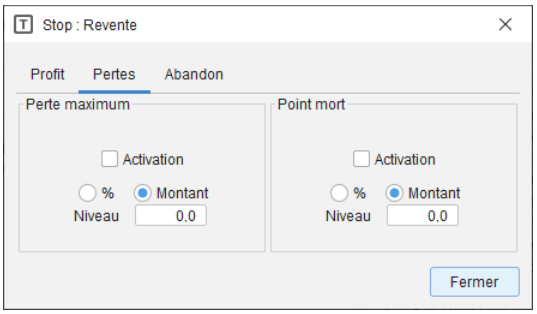


Stop if the ***Profit target*** is reached

This *stop* is activated by checking the ***Activation*** box. The profit target level is set in ***Amount*** or as a ***%*** of the opening price. Enter the profit level in the ***Level*** field.

Stop when the ***Trailing stop*** level is breached.

This *stop* is activated by checking the ***Activation*** box. A *trailing stop* allows defining the price level to close the position at each period. This level is recalculated at each period based on a formula defined by the user. This formula is equivalent to programming a *personal indicator*. Click on the **Edit** button to open the dialog box for programming this formula and then select its name from the drop-down list to assign it to the *trailing stop*.

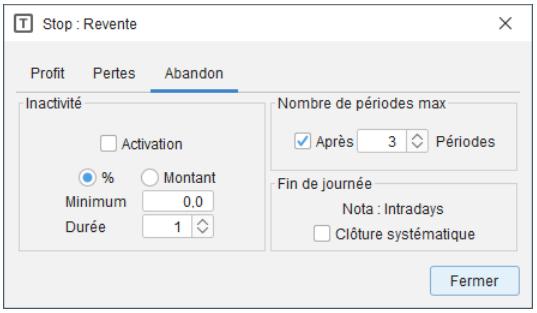


Stop if the position reaches a ***Maximum loss*** level.

This *stop* is activated by checking the ***Activation*** box. The maximum loss level for the position is set in ***Amount*** or as a ***%*** of the opening price. Enter the loss level in the ***Level*** field.

Stop if the ***Break even*** is reached.

This *stop* is activated by checking the ***Activation*** box. It triggers when the price returns near the opening price. The break-even threshold is set in ***Amount*** or as a ***%*** of the opening price. Enter the break-even threshold in the ***Level*** field.



Stop in case of ***Inactivity***.

This *stop* is activated by checking the ***Activation*** box. It allows avoiding keeping a position open if the price does not evolve sufficiently during a certain duration. Check the corresponding boxes in the ***Inactivity*** frame and enter the numerical value (in % or amount) of the ***Minimum*** threshold to be exceeded, as well as the number of periods defining the duration since the opening of the position.

Stop after a ***Max number of periods***.

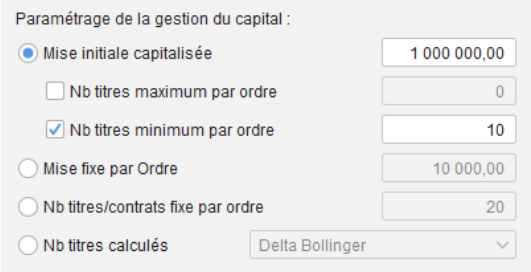
This *stop* is activated by checking the ***After*** box. It allows systematically closing a position after a fixed number of periods if the position is still open. Define in the ***Periods*** drop-down list this maximum number of periods for the position opening.

Stop at ***End of day*** (intraday case)

Check the box in the corresponding frame to activate this *stop* mode applied only in the case of intraday charts.

2.6. Defining Modalities

Select the ***General*** tab and specify the following modalities for the application of the *strategy*:



2.6.1. Starting capital

Four different methods can be used to define the number of shares at position opening:

Capitalized initial stake

At each position opening, ***Axial Finance*** determines the maximum number of shares that can be bought (or sold) based on the available capital and the current price. Upon position closure, the available capital is updated according to the profit or loss realized. The amount to enter for this method corresponds to the capital available for the first position opening.

It is also possible to impose:

- A maximum number of shares per order.
- A minimum number of shares per order. Thus, no order will be executed if the available capital is insufficient.

Fixed stake per order

The capital available at position opening is always the same. ***Axial Finance*** determines the maximum number of shares that can be bought (or sold) based on this available capital and the current price.

Fixed number of shares or contracts per order

The quantity of shares or contracts bought (or sold) is always the same.

Calculated number of shares

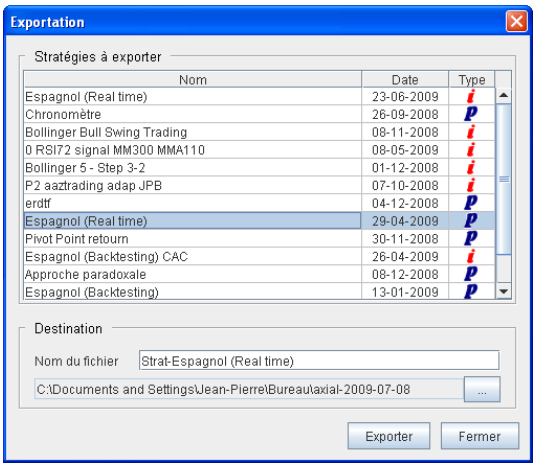
The quantity of shares is calculated at each opening from a programmable mathematical formula. This programming is performed using a *personal indicator*, where the indicator value at the position opening bar must be equal to the number of shares.

In the second and third methods, for the calculation of the *strategy* result, ***Axial Finance*** determines retrospectively the initial capital that would have been necessary to maintain a positive or zero available capital at all times.

2.7. Importing and exporting strategies

Axial Finance allows for the importing and exporting of *strategies* between users of the software. These exchanges are performed using files transmitted via the Internet.

2.7.1. Exporting a strategy



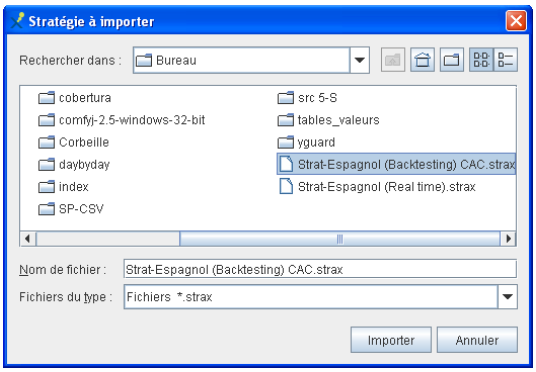
i. In the general ***Trading System*** menu, choose the options ***Export*** then ***Strategy*** to open the dialog window shown here.
ii. Select the *strategy* to export from the list
iii. In the ***File name*** field, keep the default name set by the software or choose another name for the exported file.
iv. Click on the **...** button to open the destination directory selection window where the file will be saved, then click on the **Choose** button.
v. Then click on the **Export** button.

The created file has the extension `.strax` and appears in the destination directory under the full name `filename.strax`.

The *indicators* and *personal signals* included in the *strategy* will be exported simultaneously in the same file.

2.7.2. Importing a strategy

The *strategy* file to be imported is saved on the computer's drive or on a USB flash drive:



i. In the general ***Trading System*** menu, choose the options ***Import from file*** then ***Strategy*** to open the dialog window shown here.
ii. In the search window, select the directory and then the file to import, which must have the extension `.strax`.
iii. Click on the **Import** button.

In the *strategies* library, imported *strategies* are identified by the symbol

3. Programming indicators

3.1. Generalities

An *indicator* (or *technical indicator*) defines the evolution over time of a variable characterizing the state of a stock or market. There are many *indicators* created by analysts, generally classified into the following categories:

- Trend indicators
- Momentum indicators
- Volatility indicators
- Volume indicators
- Market indicators
- Support-resistance indicators

However, each user may be required to design other *indicators*, called *personal indicators*, for use in *signals*.

Axial Finance is provided with a library containing many *indicators* and also allows programming *personal indicators* or importing *indicators* designed by other users of the software.

3.2. Library of available indicators

Each indicator is defined by a **unique code** used in the programming of other *indicators* and *signals*.

3.2.1. Indicators from technical analysis:

Code	Name	Script
`AROdown`	Aaron Indicator down	AROdown(n, Periode)
`AROup`	Aaron Indicator up	AROup(n, Periode)
`AROosc`	Aaron Oscillator	AROosc(n, Periode)
`ADI`	Accumulation Distribution Index	ADI(n)
`ADWP`	Accumulation Distribution Williams	ADWP(n)
`ASI`	Accumulation Swing Index	ASI(n)
`ADX`	Average Directional Index	ADX(n, Periode)

Code	Name	Script
ATR	Average True Range	ATR(n, Periode)
BBB	Lower Bollinger Band	BBB(n, Periode, StDev, Type)
BBH	Upper Bollinger Band	BBH(n, Periode, StDev, Type)
COG	Center of Gravity	COG(n, Periode, Prix)
CMF	Chaikin Money Flow	CMF(n, Periode)
COS	Chaikin Oscillator	COS(n, PeriodeCt, PeriodeLt)
CVO	Chaikin Volatility	CVO(n, Periode)
CMO	Chande Momentum Oscillator	CMO(n, Periode)
CRL	Linear Regression Curve	CRL(n, Periode, Type)
CRP	Close Range Position Index	CRP(n, Periode)
CCI	Commodity Channel Index	CCI(n, Periode)
CSI	Commodity Selection Index	CSI(n, Periode)
PRX	Price (close, open, high, ...)	PRX(n, Type)
PRXH	Heikin Ashi Price (close, open, high, ...)	PRXH(n, Type)
CLO	Closing price	CLO(n)
OPEN	Opening price	OPEN(n)
HIGH	Highest price	HIGH(n)
LOW	Lowest price	LOW(n)
DPO	Detrended Price Oscillator	DPO(n, Periode)
DXm	Directional Indicator Minus	DXm(n, Periode)
DXp	Directional Indicator Positive	DXp(n, Periode)
DEMA	Double EMA	DEMA(n, Periode)
EOM	Ease Of Movement	EOM(n)
FIX	Force Index	FIX(n, Periode)
KAGI	KAGI (see note below)	KAGI(n, Mode, Seuil)
KBB	Upper Keltner Band	KBB(n, Periode, Variation)
KBH	Lower Keltner Band	KBH(n, Periode, Variation)
KLO	Klinger Oscillator	KLO(n, PeriodeCt, PeriodeLt, PeriodeTr)
MACD	Moving Average Convergence Divergence	MACD(n, PeriodeCt, PeriodeLt)
MACDH	MACD - Trigger	MACDH(n, PeriodeCt, PeriodeLt, PeriodeTr)
MASI	Mass Index	MASI(n, Periode, PeriodeEMA)
MINL	Minimum Lows	MINL(n, Periode)
MAXH	Maximum Highs	MAXH(n, Periode)
MOM	Momentum	MOM(n, Periode)
MFI	Money Flow Index	MFI(n, Periode)
MMAR	Arithmetic Moving Average	MMAR(n, Periode, Type)
MMEX	Exponential Moving Average	MMEX(n, Periode, Type)
MMPD	Weighted Moving Average	MMPD(n, Periode, Type)
MMTR	Triangular Moving Average	MMTR(n, Periode, Type)

Code	Name	Script
MMVA	Volume Adjusted Moving Average	MMVA(n, Periode, Type)
MMVR	Variable Moving Average	MMVR(n, Periode, Type)
MMVH	MMVH	MMVH(n, Periode)
MMT3T	T3 Tilson Moving Average	MMT3T(n, Periode, Ratio)
NVI	Negative Volume Index	NVI(n)
OBV	On Balance Volume	OBV(n)
OCV	Open-Close Volatility Index	OCV(n, Periode)
ORP	Open-Range Position Index	ORP(n, Periode)
OSC	Moving Average Oscillator	OSC(n, Periode1, Periode2, Type)
ORL	Linear Regression Oscillator	ORL(n, Periode, Type)
PCRW	%R Williams	PCRW(n, Periode)
PRF	Performance Index	PRF(n, Type)
PVI	Positive Volume Index	PVI(n)
POSC	Price Oscillator	POSC(n, PeriodeCt, PeriodeLt)
PROC	Price Rate Of Change	PROC(n, Periode)
PRL	Relative Prices (or Relative Strength)	PRL(n, Valeur)
PVT	Price and Volume Trend	PVT(n)
QSI	Q-Stick Indicator	QSI(n, Periode)
RWIhigh	Random Walk Index High	RWIhigh(n, Periode)
RWIlow	Random Walk Index Low	RWIlow(n, Periode)
RVO	Range Volatility Index	RVO(n, Periode)
RMI	Relative Momentum Index	RMI(n, Periode, Ecart)
RSI	Relative Strength Index	RSI(n, Periode)
RVI	Relative Volatility Index	RVI(n, Periode)
SAR	Parabolic SAR	SAR(n, MaxRatio, PcAccel)
SWR	Schwager Volatility Ratio	SWR(n, Periode)
SPR	Spread	SPR(n, Valeur, Ratio)
SPTR	Super Trend	SPTR(n, Periode, Type, Prix, Ratio)
STD	Standard Deviation	STD(n, Periode)
STOD	Stochastics %D	STOD(n, Periode, PeriodeK, PeriodeD)
STOK	Stochastics %K	STOK(n, Periode, PeriodeK)
SWI	Swing Index	SWI(n)
TREND	Trend Ratio	TREND(n, Periode, Type)
TVI	Trade Volume Index	TVI(n, Mindev)
TEMA	Triple EMA	TEMA(n, Periode)
TRIX	TRIX Indicator	TRIX(n, Periode)
TSI	True Strength Indicator	TSI(n, Periode1, Periode2)
VHF	Vertical Horizontal Filter	VHF(n, Periode)
VOR	Volatility Ratio	VOR(n, Periode)

Code	Name	Script
VOL	Closing Volume	VOL(n)
VOS	Volume Oscillator	VOS(n, PeriodeCt, PeriodeLt)
VROC	Volume Rate Of Change	VROC(n, Periode)
WUO	Ultimate Oscillator	WUO(n, PeriodeCt, PeriodeMt, PeriodeLt)
LVLR	Resistance Level	LVLR(n, Rang)
LVLS	Support Level	LVLS(n, Rang)

Note

To define the different states of the *KAGI indicator*, the convention adopted is as follows: It returns the numerical value `+2` in case of an upward reversal, `-2` in case of a downward reversal, `+3` in case of moving from upward to downward pressure, `-3` in case of moving from downward to upward pressure, otherwise `+1` when pressure is increasing and `-1` when pressure is decreasing.

3.2.2. Date and time functions:

YEAR	Year	YEAR(n)
HOUR	Hour	HOUR(n)
DAYW	Day of the week	DAYW(n)
DAYM	Day of the month	DAYM(n)
MONTH	Month of the year	MONTH(n)

3.2.3. Indicators from Fundamental Analysis:

ACNA	Net Asset per Share	ACNA(n)
BPAA	Earnings per Share	BPAA(n)
CPPR	Equity	CPPR(n)
CHAF	Revenue	CHAF(n)
DTNT	Net Debt	DTNT(n)
EBIT	EBIT	EBIT(n)
PER	Price Earning Ratio	PER(n)
CAPI	Capitalization Ratio	CAPI(n)
RNET	Net Income	RNET(n)

3.2.4. Indicators relative to strategy positions:

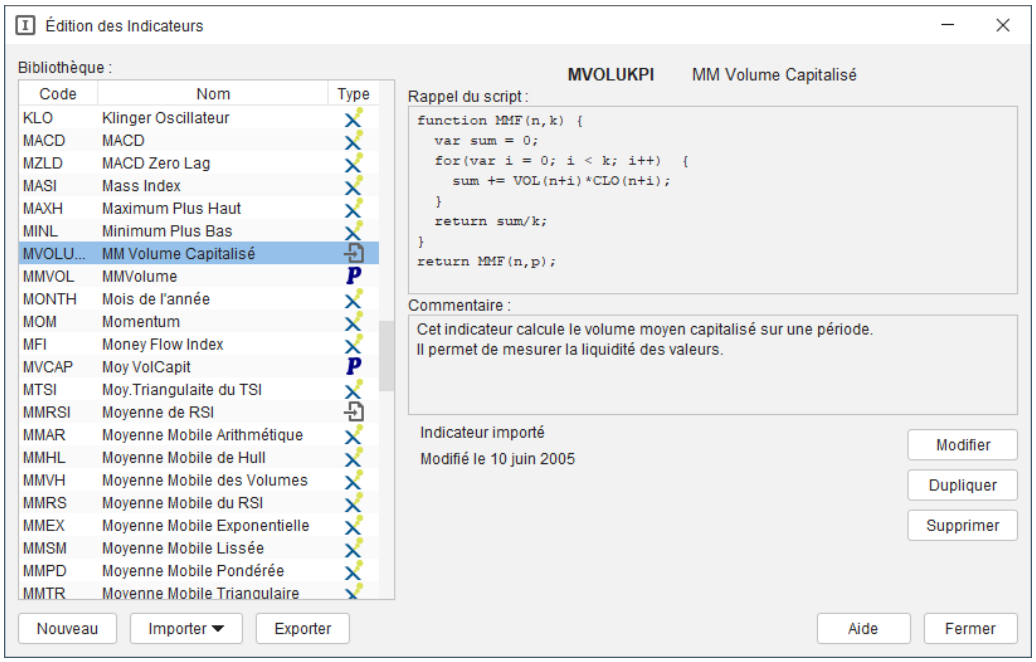
These *indicators* are used only for the programming of the opening and closing *rules* of a *strategy*.

DAOP	Number of *bars* since opening	DAOP(n)
DCP	Number of *bars* since closure	DCP(n)
DDSC	Number of *bars* since the closure *signal*	DDSC(n)

DDSO	Number of *bars* since the *signal* of opening	DDSO(n)
POP	Opening price	POP(n)
TISC	Price at the closure *signal*	TISC(n, Type)
TISO	Price at the opening *signal*	TISO(n, Type)
HCLOSE	Closing hour	HCLOSE(n)
HOPEN	Opening hour	HOPEN(n, Type)

3.2.5. Library

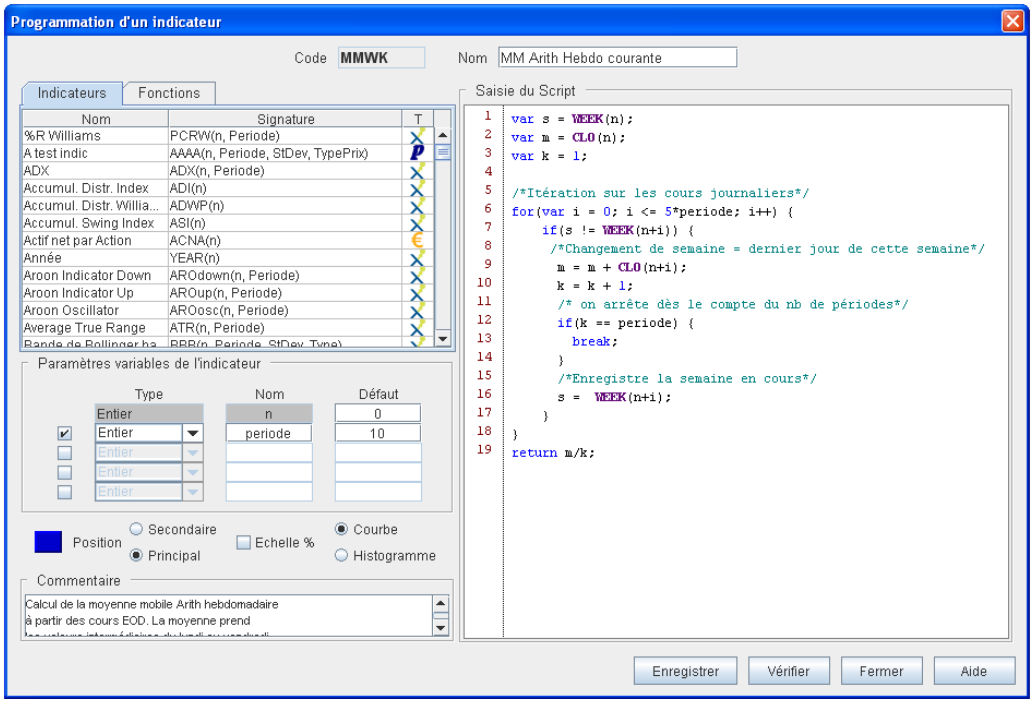
To access the *indicators* library, in the general ***Trading System*** menu, choose the option ***Indicators***. The window below opens:



Each indicator is defined by its code, its name, its ***script***, its variable parameters and an optional comment.

3.3. Programming a personal indicator

To program a *personal indicator*, open the window above and then click on the **New** button to open the entry window below.



Important

A manual explaining how to program in JavaScript is available on the website www.axialfinance.com

1. Enter the code of the *indicator*. This **code is unique** and will be used to reference this *indicator*. **This code must contain at least 4 characters**, letters or numbers only. ***Axial Finance*** will refuse entry if this code is already in use or if the entry is non-compliant. This code cannot be modified later. If needed, you should first cancel the *indicator* then reprogram it with a different code.
2. Enter the name of the *indicator*.
3. Enter the JavaScript program in the ***Script entry*** area. To include an *indicator* or a mathematical function from the library in the *script*, simply double-click on the name of this element in the library after placing the cursor in the *script* at the exact place where it should be written.
4. The *script* includes two types of variables: internal variables that can only be changed by modifying the *script*, and external variables that the user will have the ability to vary later (for example, the period of the *indicator*) without changing the programming.
   - Internal variables are defined in the body of the JavaScript program with the reference **var**: example "var sum = 0"
   - External variables are designated by their name in the *script* and defined with a type and a default value in the ***Indicator variable parameters*** area located below the library.

     A *indicator* can include a maximum of 5 external variables, including the mandatory parameter ***n*** which defines the *bar* for calculation. Generally, this parameter ***n*** remains at zero, signifying that the *indicator* should be evaluated at the *current bar*. However, in some cases, one may want to offset the *bar* for calculation. By convention, ***n+1*** will correspond to a delay of one *bar*, ***n+2*** to a delay of two *bars*, etc. Consequently, if in a *script* the time must be rolled back by one *bar* for a function, one should use ***n +1*** instead of ***n*** as the parameter value.

The reference to time is dependent on the periodicity of the prices used for calculation. Thus, with daily charts, ***n+1*** corresponds to a one-day delay. If the same *indicator* is used with intraday 5-minute charts, ***n+1*** corresponds to a 5-minute delay, etc.

The names of the external variables (other than n) are defined by the user. Each name must be unique. All external variables in the script must be defined in the ***Indicator variable parameters*** area using the same name as in the *script* (it is imperative to respect uppercase and lowercase characters). A default value is automatically provided, but the effective value of the variable will be that defined by the user when using this *indicator* in a *signal*, a *rule*, or a *strategy*.

Different types of variables:

Integer	Whole number
Real	Real number
Price	Nature of the price: open, high, ...
Mov.Avg.	Nature of the moving average: arithmetic, exponential, ...
Instrument	The code of an instrument
Mode	A currency or a %
Text	Alphanumeric characters

By convention, among the 4 available external variables, an *indicator* can include a maximum of the following types:

- One ***Real***
- In addition to the variable ***n***, three ***Integer*** if there is no variable defined as a ***Real***, otherwise two ***Integer***.
- One variable of type ***Text*** or ***Mov.Avg.*** or ***Price*** or ***Instrument*** or ***Mode***

Axial Finance will refuse variables if this convention is not respected. To add or remove an external variable, check or uncheck the checkbox for that line.

5. By convention, the last line of the *script* must return the result of the *indicator* calculation. This result must be the calculated numerical value.
6. To verify that the *script* is correct according to the JavaScript language, click on the **Verify** button. In case of a programming error, a message indicates the erroneous line.
7. Click on the **Save** button to save this *indicator* in the library. It will appear with the symbol **P**
8. To modify a *personal indicator*, select it in the ***Indicator Editing*** window and click on the **Modify** button. Only the code of the *indicator* cannot be modified.
9. To delete a *personal indicator*, select it in the ***Indicator Editing*** window and click on the **Delete** button. Deletion will be refused if this *personal indicator* is present in a *signal* or a *strategy*.

3.4. Graphical representation of a personal indicator

When programming a *personal indicator*, you must specify how to display it on a chart. In the programming window, below the ***Variable indicator settings*** frame, you can define:

- Plotting in the *main chart* of prices or in a *secondary chart* of a *chart window*. Check the corresponding case: ***Primary*** or ***Secondary***.
- The color of the curve representing the *indicator*. Click on the color button to open the palette of choices.
- The vertical scale in units or as a percentage. Check the ***%*** box for the second choice.
- Plotting in the form of a continuous curve or in the form of a histogram. Check the corresponding case: ***Curve*** or ***Histogram***.

3.5. Mathematical Functions

A library of mathematical functions is available for the programming of *indicators*. It includes classic mathematical functions (example: `ACOSINE(n)`, `LOG(n)`, `MAX(f,g)`, etc.) and the following technical analysis specific functions:

`MOVA(FCT,n,p,q,r,t)`	Arithmetic Moving Average
`MOVE(FCT,n,p,q,r,t)`	Exponential Moving Average
`MOVP(FCT,n,p,q,r,t)`	Weighted Moving Average
`SLOPE(FCT,n,p,q,r,t)`	Slope of the Linear Regression Line

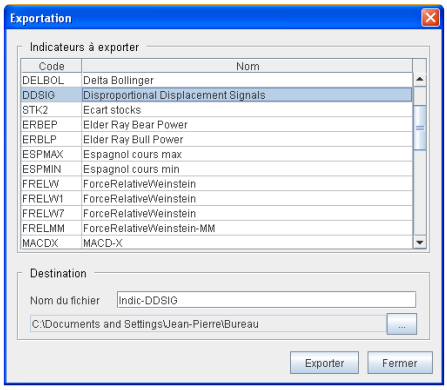
For these specific functions, the meaning of the parameters is as follows:

`FCT`	Code of the *indicator* for calculating the moving average or the slope of the linear regression line
`n`	Time parameter
`p`	Calculation period of the moving average or the slope of the linear regression line
`q,r,t`	3 parameters available in case the *indicator* defined by the code `FCT` requires it. Unused parameters remain present in the formula but do not need to be defined

3.6. Importing and exporting personal indicators

Axial Finance allows for the importing and exporting of *personal indicators* between users of the software. These exchanges are performed using files transmitted via the Internet.

3.6.1. Exporting an indicator

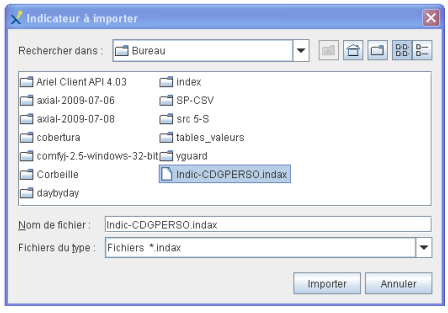


i. In the general ***Trading System*** menu, choose the options ***Export*** then ***Indicator*** to open the dialog window shown here.
ii. Select the *indicator* to export from the list.
iii. In the ***File name*** field, keep the default name set by the software or choose another name for the exported file.
iv. Click on the **...** button to open the destination directory selection window where the file will be saved, then click on the **Choose** button.
v. Then click on the **Export** button.

The created file has the extension `.indax` and appears in the destination directory under the full name `filename.indax`.

3.6.2. Importing an indicator

The *indicator* file to be imported is saved on the computer's hard drive or on a USB flash drive:



i. In the general ***Trading System*** menu, choose the options ***Import from file*** then ***Indicator*** to open the dialog window shown here.
ii. In the search window, select the directory and then the file to import, which must have the extension `.indax`.
iii. Click on the **Import** button.

In the *indicators* library, imported *indicators* are identified by the symbol

4. Programming signals

4.1. Generalities

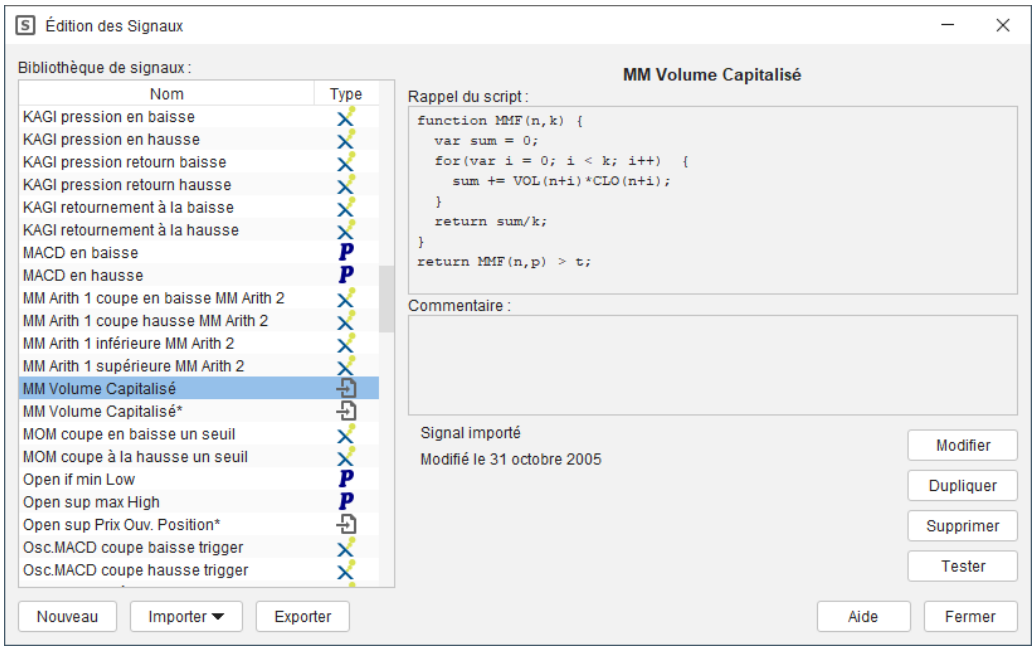
A *signal* defines the TRUE or FALSE state of a condition at each *bar*.

The *signal* is the basis of the opening and closing *rules*, each *rule* corresponding to a logical combination of *signals*. A *signal* can therefore be defined as the elementary condition used to compose a *rule*.

Axial Finance is provided with a library of *signals* called **native signals** corresponding to the most frequently used signals. One can program and add other *signals* to the library, called *personal signals*, or import *signals* programmed by other users of the software.

4.2. Library of signals

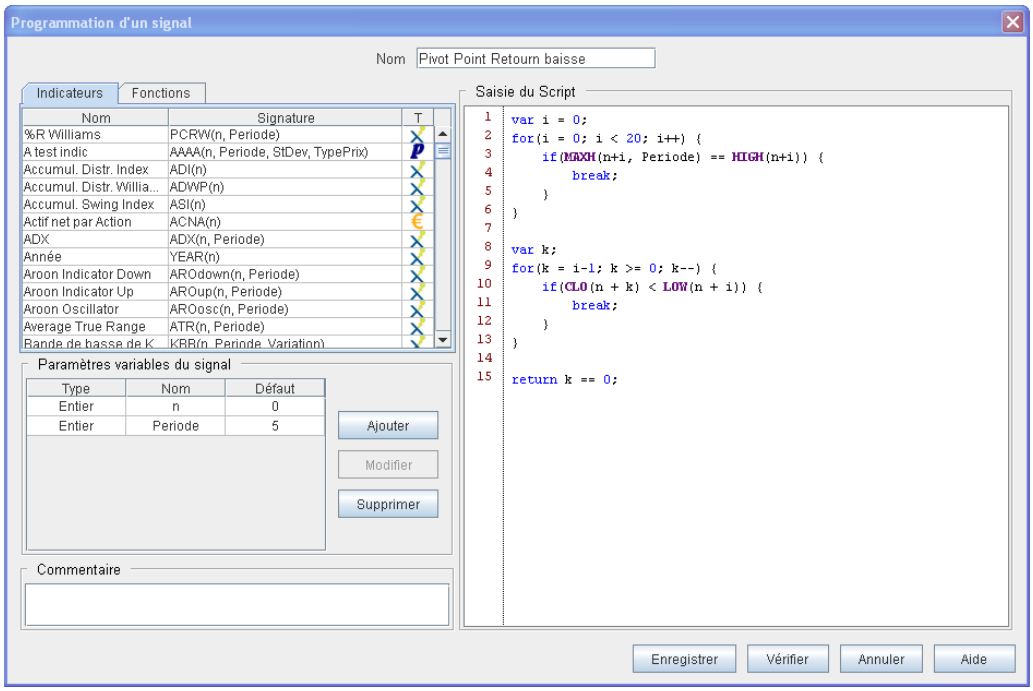
To access the *signals* library, in the general ***Trading System*** menu, choose the option ***Signals*** to open the window below.



Each *signal* is defined by its name, its script, its variable parameters and eventually a comment. Native signals are identified by the icon .

4.3. Programming a personal signal

To program a *personal signal*, open the previous window and then click on the **New** button to open the entry window below:



Important

A manual explaining how to program in JavaScript is available on the website www.axialfinance.com

1. Enter the name of the *signal*. This name can be modified later if needed.
2. Enter the JavaScript program in the ***Script entry*** area defining the *signal*. To include an *indicator* or a mathematical function from the library in the *script*, simply double-click on the name of this element in the library after placing the cursor in the *script* at the exact place where it should be written.
3. The *script* includes two types of variables: internal variables that can only be changed by modifying the *script*, and external variables that the user will have the ability to vary later (for example, the period of the *indicator*) without changing the programming.
   - Internal variables are defined in the body of the JavaScript program with the reference **var**: example "var sum = 0"
   - External variables are designated by their name in the *script* and defined with a type and a default value in the ***Signal variable parameters*** area located below the library.

   A *signal* can include any number of external variables. All external variables in the script must be defined in the ***Signal variable parameters*** area using the same name (it is imperative to respect uppercase and lowercase characters). A default value is automatically provided, but the effective value of the variable will be that defined by the user when using this *signal* in a *rule* or a *strategy*.
   - To add an external variable to the list, click on the **Add** button.
   - To remove an external variable from the list, select it and then click on the **Delete** button.
   - To modify an external variable, select it and then click on the **Modify** button.

   Different types of variables:

Integer	Whole number
Real	Real number
Price	Nature of the price: open, high, ...

M.A.	Nature of the moving average: arithmetic, exponential, ...
Instrument	The code of an instrument
Mode	A currency or a %
Text	Alphanumeric characters

4. By convention, the last line of the *script* must return the result of the *signal* evaluation. This result must be a boolean value TRUE or FALSE.
5. To verify that the *script* is correct according to the JavaScript language, click on the **Verify** button. In case of a programming error, a message indicates the erroneous line.
6. Click on the **Save** button to save this *personal signal* in the library. It will appear with the symbol P
7. To modify a *personal signal*, select it in the ***Signal Editing*** window and click on the **Modify** button.
8. To delete a *personal signal*, select it in the ***Signal Editing*** window and click on the **Delete** button. Deletion will be refused if this *personal signal* is present in a *rule* or a *strategy*.

4.4. Applying a signal to a price chart

Before using a *personal signal* in a *rule* or a *strategy*, it is useful to verify directly on a price chart if the result is as expected.

i. Select the *signal* in the ***Signal Editing*** window and click on the **Test** button. The test is then performed in the *chart window* selected in the ***Market Tracking*** area.
ii. Define the external parameters of the *signal* in the dialog box that opens before the start of the test. At the opening of this window, default parameters are proposed.
iii. Click on the **Close** button.

In the price chart, detected *signals* are represented by a blue vertical arrow.

4.5. Mathematical functions

A library of mathematical functions is available for the programming of *indicators*. It includes classic mathematical functions (example: `ACOSINE(n)`, `LOG(n)`, `MAX(f,g)`, etc.) and the following technical analysis specific functions:

`MOVA(FCT,n,p,q,r,t)`	Arithmetic Moving Average
`MOVE(FCT,n,p,q,r,t)`	Exponential Moving Average
`MOVP(FCT,n,p,q,r,t)`	Weighted Moving Average
`SLOPE(FCT,n,p,q,r,t)`	Slope of the Linear Regression Line

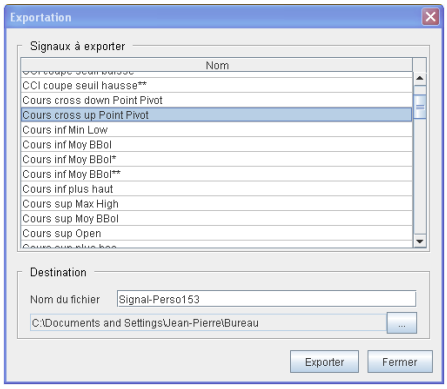
For these specific functions, the meaning of the parameters is as follows:

`FCT`	Code of the *indicator* for calculating the moving average or the slope of the linear regression line
`n`	Time parameter
`p`	Calculation period of the moving average or the slope of the linear regression line
`q,r,t`	3 parameters available in case the *indicator* defined by the code `FCT` requires it. Unused parameters remain present in the formula but do not need to be defined

4.6. Importing and exporting personal signals

Axial Finance allows for the importing and exporting of *personal signals* between users of the software. These exchanges are performed using files transmitted via the Internet.

4.6.1. Exporting a signal

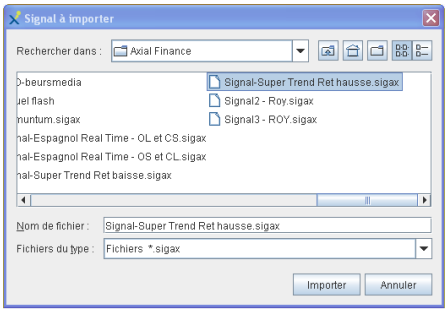


i. In the general ***Trading System*** menu, choose the options ***Export*** then ***Signal*** to open the dialog window shown here.
ii. Select the *signal* to export from the list.
iii. In the ***File name*** field, keep the default name set by the software or choose another name for the exported file.
iv. Click on the **...** button to open the destination directory selection window where the file will be saved, then click on the **Choose** button.
v. Then click on the **Export** button.

The created file has the extension `.sigax` and appears in the hard drive directory under the full name `filename.sigax`.

4.6.2. Importing a signal

The *signal* file to be imported is saved on the computer's drive or on a USB flash drive:



i. In the general ***Trading System*** menu, choose the options ***Import from file*** then ***Signal*** to open the dialog window shown here.
ii. In the search window, select the directory and then the file to import, which must have the extension `.sigax`.
iii. Click on the **Import** button.

In the *signals* library, imported *signals* are identified by the symbol

5. Strategy applied to a price chart

5.1. Generalities

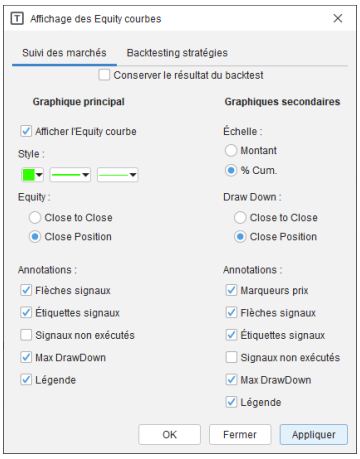
A *strategy* can be applied directly to a price chart over a determined period. This operation is generally called *backtesting*.

Axial Finance offers the possibility of plotting the *equity curve* in the *main chart* of the prices in the selected *chart window* in the ***Market Tracking*** area, or plotting this *equity curve* in a *secondary chart*. Information regarding position opening and closing as well as the *maximum drawdown* can also be displayed in the chart.

The *strategy* can be applied to the entire chart or between two specific start and end dates.

5.2. Customizing backtest result display in the chart

To customize the display of the *backtest* result in a chart, in the general ***Preferences*** menu, choose the option ***Strategy Charts*** to open the dialog window below. Select the ***Market Tracking*** tab:



- Customization concerns both the *equity curve* traced in the *main chart* and that traced in a *secondary chart*.
- To keep backtest results in memory, check the ***Keep backtest result*** box, otherwise these results will be lost upon closing the application.
- To command the plotting of the *equity curve* in the *main chart*, check the ***Show Equity Curve*** box.

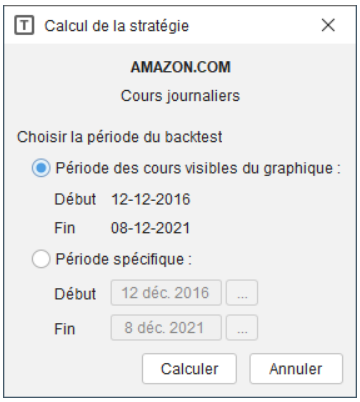
- Vertical scale for the Equity curve:
  1. In the case of the *main chart*, the vertical scale of the *equity curve* is always in monetary units.
  2. In the case of a *secondary chart*, one can choose between an amount-based scale (check ***Amount***) or as a percentage of cumulative gains (check ***% Cum.***)

  The meaning of the percentage of cumulative gains is as follows: At each position closure, the gain (or loss) is calculated as a percentage of the opening price of that position. These gains (or losses) are then accumulated. This method of evaluating results avoids artificially inflating the result when, over the duration of the *backtest*, a large price variation occurs.
- One can choose to plot or not, during position opening, the potential value of the *equity curve* at each *bar*. These are the two modes: equity in "Close to Close" or in "Close Position".
- To request vertical arrows designating position opening and closing, check ***Signal Arrows***.
- To have the nature of the position ("long" or "short") and the number of shares displayed next to the previous arrows, check ***Signal Labels***.
- When a position is open, new opening *signals* remain without effect. Similarly when a position is closed with new closing *signals*. These unexecuted *signals* can be indicated on the chart as dotted arrows. Check the ***Unexecuted Signals*** box.
- The *maximum drawdown* can be inscribed on the chart. Check the ***Max DrawDown*** box.
- A legend recalling the executed *strategy* can also be inscribed. Check the ***Legend*** box.

5.3. Commanding backtesting

To perform a *backtesting*, open the strategy editing window by choosing in the general ***Trading System*** menu the option ***Edit Strategies***.

Select the *strategy* from the library and click on the **Apply** button.



The window shown here opens to specify the period over which the *strategy* must be applied: the entire chart history (check ***Chart Dates***) or from date to date (check ***Specific dates*** and define start and end dates).

Then click on **Calculate** to execute the *strategy*.

5.4. Equity curve in the main chart

Example of obtained plot:

Symbology of the different information inscribed in the chart:

Indicates the presence of a position opening *signal* with the indication ***O.L*** if "long" or ***O.S*** if "short" (note: this arrow is only visible if the position opening is delayed relative to the *signal*).

Indicates that the position opening condition could not be executed and that the *signal* of opening is therefore cancelled because the validity period has expired.

Indicates the effective opening of a position in "long" when the condition is met.

Number of shares bought at the opening in "long".

Indicates the effective closing of a position in "long" when the condition is met.

Number of shares sold at the closing in "long".

Indicates the effective opening of a position in "short" when the condition is met.

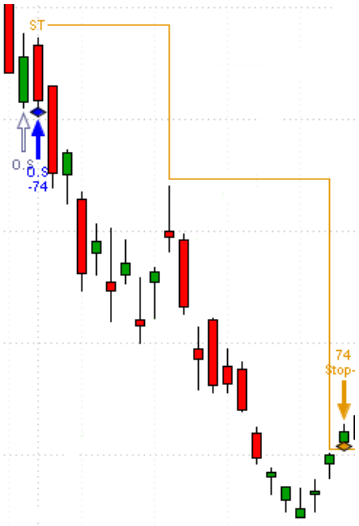
Number of shares sold at the opening in "short".

Indicates the effective closing of a position in "short" when the condition is met.

Number of shares bought at the closing in "short".

Closing a position on a *stop*.

Type of *stop*: **O** on profit target, **L**on maximum loss, **T** on profit loss, **I** on inactivity, **E** on end of day, **M** on maximum number of periods, **B** on break even.



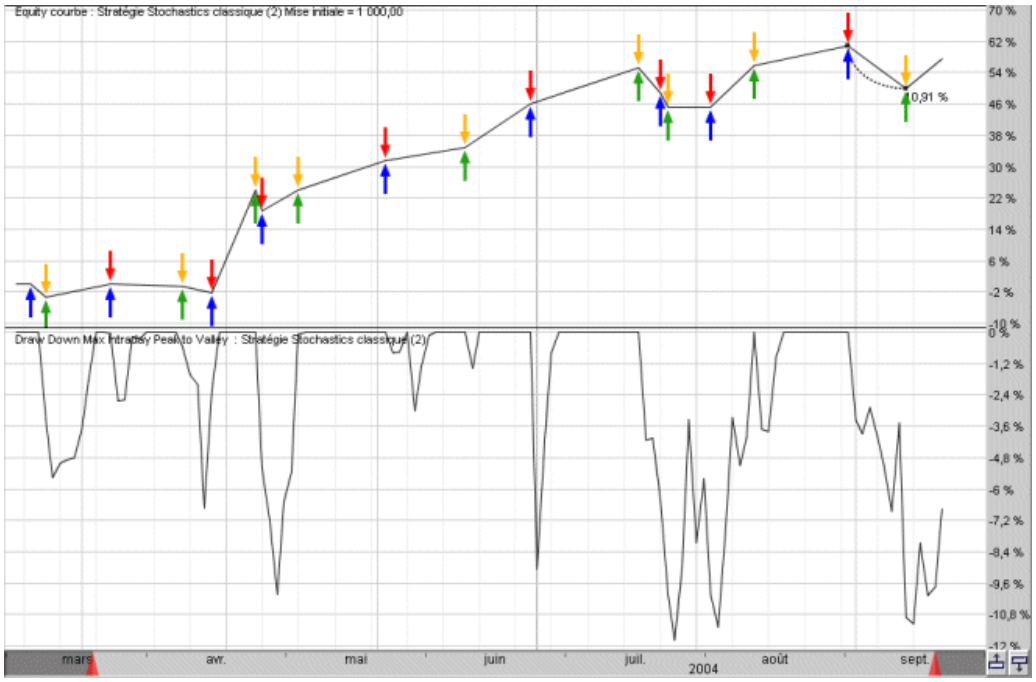
Representation of the evolution of a *trailing stop*: The orange line indicates the level of the *trailing stop* at each *bar*. In this example, we can see that:

1. A position is opened in "short" at the *bar* following the detection of the *signal*.
2. A first level of the *trailing stop* is determined according to the formula.
3. The level of the *trailing stop* is then modified twice.
4. The position closure occurs as soon as the price breaches the *trailing stop* level.

Representation of the evolution of the **invested capital** (*equity curve*) and the *maximum drawdown*:

- The **green curve** indicates the evolution of the invested capital with at its rightmost end the *net total profit*.
- A dotted **arc** joins the extreme points of the *drawdown*, with the value of the *maximum drawdown* (DDM).

5.5. Equity curve and drawdown in a secondary chart



To display these curves in a *secondary chart*, one must add the *indicators* named **Equity curve** and **Max Drawdown** from the list of *indicators*.

Also specify the information to be displayed in these charts as indicated in the paragraph Customizing backtest result display in the chart above. In particular, two settings are important for analysis:

1. The vertical scale of these charts can be set in monetary units or as a percentage of cumulative profits. Check ***Amount*** or ***% Cum.***
2. The drawdown curve can be displayed in *Close to Close* or in *Peak to Valley*. Check ***Close to Close*** or ***Close Position*** accordingly.
   - In the first case, during position opening, the *drawdown* remains at its value from the moment of opening. Upon position closure, its value is then updated.
   - In the second case, the potential *drawdown* is calculated with the lowest prices of each *bar* and displayed during position opening. A *maximum drawdown* in *Peak to Valley* mode allows one to know the real risk of maximum losses as long as the position is not closed.

6. Analysis of strategy results

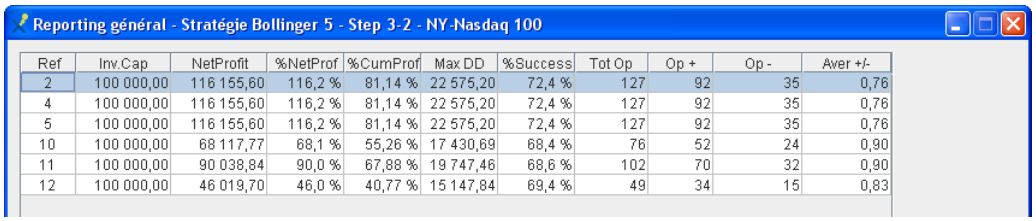
6.1. Generalities

Axial Finance presents the numerical results of *strategies* in three different forms:

1. A General report for all trials related to a single *strategy* and for a given stock.
2. A detailed report for each trial.
3. A global table of all trials performed or kept in memory with all the *strategies* and for all stocks.

6.2. General report of strategy trials

Once the backtesting operation is performed, click on the **Report** button in the strategy editing window. A new window opens providing a list of all trials performed with this *strategy*:



Ref	Inv.Cap	NetProfit	%NetProf	%CumProf	Max DD	%Success	Tot Op	Op +	Op -	Aver +/-
2	100 000,00	116 155,60	116,2 %	81,14 %	22 575,20	72,4 %	127	92	35	0,76
4	100 000,00	116 155,60	116,2 %	81,14 %	22 575,20	72,4 %	127	92	35	0,76
5	100 000,00	116 155,60	116,2 %	81,14 %	22 575,20	72,4 %	127	92	35	0,76
10	100 000,00	68 117,77	68,1 %	55,26 %	17 430,69	68,4 %	76	52	24	0,90
11	100 000,00	90 038,84	90,0 %	67,88 %	19 747,46	68,6 %	102	70	32	0,90
12	100 000,00	46 019,70	46,0 %	40,77 %	15 147,84	69,4 %	49	34	15	0,83

This general reporting table summarizes the main results of each trial for a single stock:

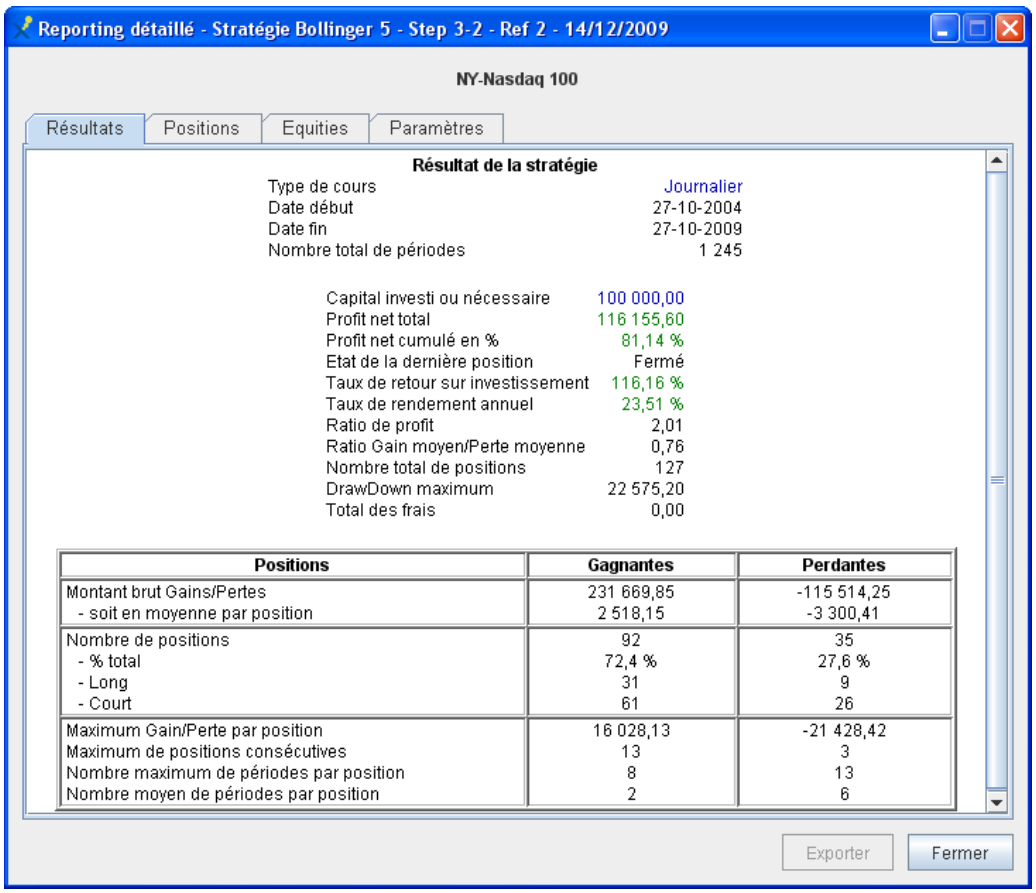
Ref The reference number of the trial
Inv. Cap. The reminder of the initial capital invested or required to apply the *strategy*
Net Profit The realized net profit
% Net Pro. The percentage of net profit realized relative to the initial capital invested
% Cum. Pro. The percentage of cumulative gains (or losses)
max DD The *maximum drawdown* (in monetary units)
% Success The percentage of success (ratio of winning positions to the total number of positions)
No. Trades The total number of positions
Win Trades The number of winning positions
Loss Trades The number of losing positions
Avg G/L The ratio of net gains to net losses

6.3. Detailed report of a strategy trial

To access the detailed report of the trial, select it from the list in the general reporting window and click on the **Detail** button, or double-click directly on the trial in the list.

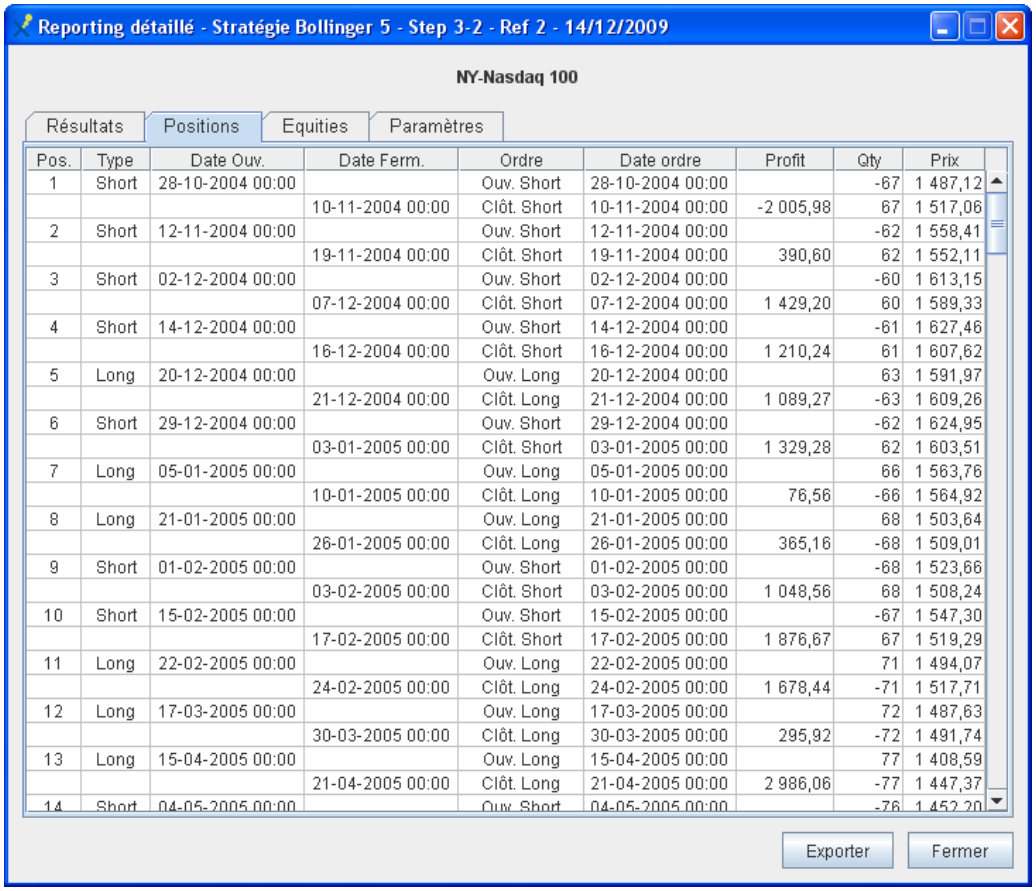
Another window opens allowing you to consult the following four reports:

6.3.1. Results



This first table presents the various calculated ratios. It also specifies the start and end dates of the trial, the nature of the prices and their periodicity, as well as the status of the last position if it is still open.

6.3.2. Positions

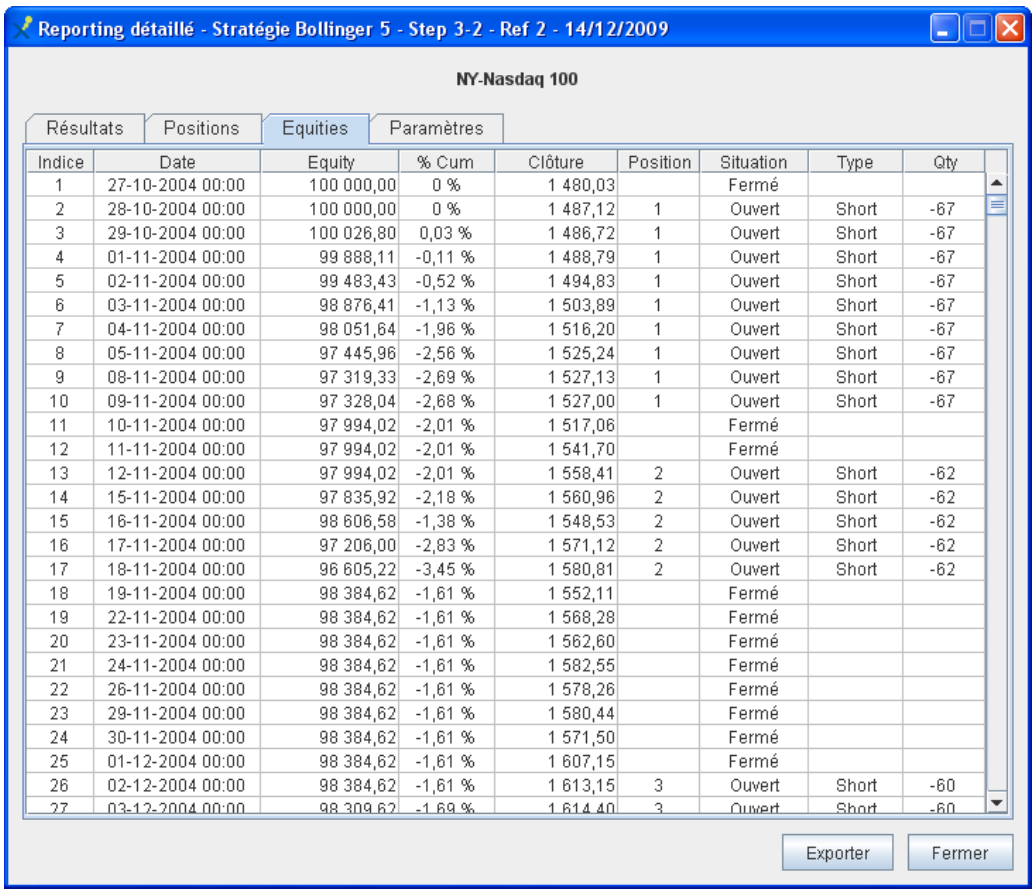


Pos.	Type	Date Ouv.	Date Ferm.	Ordre	Date ordre	Profit	Qty	Prix
1	Short	28-10-2004 00:00		Ouv. Short	28-10-2004 00:00		-67	1 487,12
			10-11-2004 00:00	Clôt. Short	10-11-2004 00:00	-2 005,98	67	1 517,06
2	Short	12-11-2004 00:00		Ouv. Short	12-11-2004 00:00		-62	1 558,41
			19-11-2004 00:00	Clôt. Short	19-11-2004 00:00	390,60	62	1 552,11
3	Short	02-12-2004 00:00		Ouv. Short	02-12-2004 00:00		-60	1 613,15
			07-12-2004 00:00	Clôt. Short	07-12-2004 00:00	1 429,20	60	1 589,33
4	Short	14-12-2004 00:00		Ouv. Short	14-12-2004 00:00		-61	1 627,46
			16-12-2004 00:00	Clôt. Short	16-12-2004 00:00	1 210,24	61	1 607,62
5	Long	20-12-2004 00:00		Ouv. Long	20-12-2004 00:00		63	1 591,97
			21-12-2004 00:00	Clôt. Long	21-12-2004 00:00	1 089,27	-63	1 609,26
6	Short	29-12-2004 00:00		Ouv. Short	29-12-2004 00:00		-62	1 624,95
			03-01-2005 00:00	Clôt. Short	03-01-2005 00:00	1 329,28	62	1 603,51
7	Long	05-01-2005 00:00		Ouv. Long	05-01-2005 00:00		66	1 563,76
			10-01-2005 00:00	Clôt. Long	10-01-2005 00:00	76,56	-66	1 564,92
8	Long	21-01-2005 00:00		Ouv. Long	21-01-2005 00:00		68	1 503,64
			26-01-2005 00:00	Clôt. Long	26-01-2005 00:00	365,16	-68	1 509,01
9	Short	01-02-2005 00:00		Ouv. Short	01-02-2005 00:00		-68	1 523,66
			03-02-2005 00:00	Clôt. Short	03-02-2005 00:00	1 048,56	68	1 508,24
10	Short	15-02-2005 00:00		Ouv. Short	15-02-2005 00:00		-67	1 547,30
			17-02-2005 00:00	Clôt. Short	17-02-2005 00:00	1 876,67	67	1 519,29
11	Long	22-02-2005 00:00		Ouv. Long	22-02-2005 00:00		71	1 494,07
			24-02-2005 00:00	Clôt. Long	24-02-2005 00:00	1 678,44	-71	1 517,71
12	Long	17-03-2005 00:00		Ouv. Long	17-03-2005 00:00		72	1 487,63
			30-03-2005 00:00	Clôt. Long	30-03-2005 00:00	295,92	-72	1 491,74
13	Long	15-04-2005 00:00		Ouv. Long	15-04-2005 00:00		77	1 408,59
			21-04-2005 00:00	Clôt. Long	21-04-2005 00:00	2 986,06	-77	1 447,37
14	Short	04-05-2005 00:00		Ouv. Short	04-05-2005 00:00		-76	1 452,20

This second table provides the list of all positions that were opened, with for each position:

- Its nature, "long" or "short"
- The type of order placed to open and close the position
- The opening and closing dates
- The realized profit or loss
- The number of shares
- The order price at opening and at closing

6.3.3. Equities

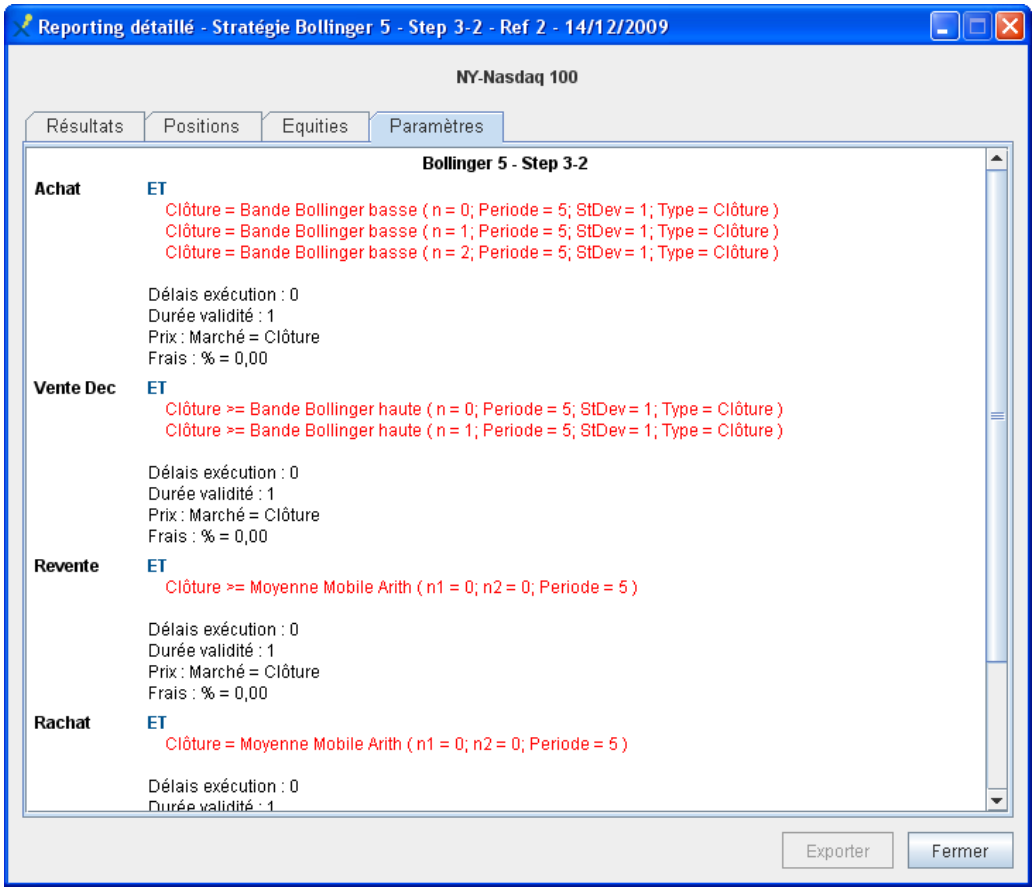


Indice	Date	Equity	% Cum	Clôture	Position	Situation	Type	Qty
1	27-10-2004 00:00	100 000,00	0 %	1 480,03		Fermé		
2	28-10-2004 00:00	100 000,00	0 %	1 487,12	1	Ouvert	Short	-67
3	29-10-2004 00:00	100 026,80	0,03 %	1 486,72	1	Ouvert	Short	-67
4	01-11-2004 00:00	99 888,11	-0,11 %	1 488,79	1	Ouvert	Short	-67
5	02-11-2004 00:00	99 483,43	-0,52 %	1 494,83	1	Ouvert	Short	-67
6	03-11-2004 00:00	98 876,41	-1,13 %	1 503,89	1	Ouvert	Short	-67
7	04-11-2004 00:00	98 051,64	-1,96 %	1 516,20	1	Ouvert	Short	-67
8	05-11-2004 00:00	97 445,96	-2,56 %	1 525,24	1	Ouvert	Short	-67
9	08-11-2004 00:00	97 319,33	-2,69 %	1 527,13	1	Ouvert	Short	-67
10	09-11-2004 00:00	97 328,04	-2,68 %	1 527,00	1	Ouvert	Short	-67
11	10-11-2004 00:00	97 994,02	-2,01 %	1 517,06		Fermé		
12	11-11-2004 00:00	97 994,02	-2,01 %	1 541,70		Fermé		
13	12-11-2004 00:00	97 994,02	-2,01 %	1 558,41	2	Ouvert	Short	-62
14	15-11-2004 00:00	97 835,92	-2,18 %	1 560,96	2	Ouvert	Short	-62
15	16-11-2004 00:00	98 606,58	-1,38 %	1 548,53	2	Ouvert	Short	-62
16	17-11-2004 00:00	97 206,00	-2,83 %	1 571,12	2	Ouvert	Short	-62
17	18-11-2004 00:00	96 605,22	-3,45 %	1 580,81	2	Ouvert	Short	-62
18	19-11-2004 00:00	98 384,62	-1,61 %	1 552,11		Fermé		
19	22-11-2004 00:00	98 384,62	-1,61 %	1 568,28		Fermé		
20	23-11-2004 00:00	98 384,62	-1,61 %	1 562,60		Fermé		
21	24-11-2004 00:00	98 384,62	-1,61 %	1 582,55		Fermé		
22	26-11-2004 00:00	98 384,62	-1,61 %	1 578,26		Fermé		
23	29-11-2004 00:00	98 384,62	-1,61 %	1 580,44		Fermé		
24	30-11-2004 00:00	98 384,62	-1,61 %	1 571,50		Fermé		
25	01-12-2004 00:00	98 384,62	-1,61 %	1 607,15		Fermé		
26	02-12-2004 00:00	98 384,62	-1,61 %	1 613,15	3	Ouvert	Short	-60
27	03-12-2004 00:00	98 309,62	-1,69 %	1 614,40	3	Ouvert	Short	-60

This third table provides the list of the equity at each *bar* specifying:

- The date
- The equity value
- The cumulative percentage of profits (or losses)
- The closing price
- The reference number of the open position
- The status of the position
- The type of the open position
- The number of shares

6.3.4. Parameters



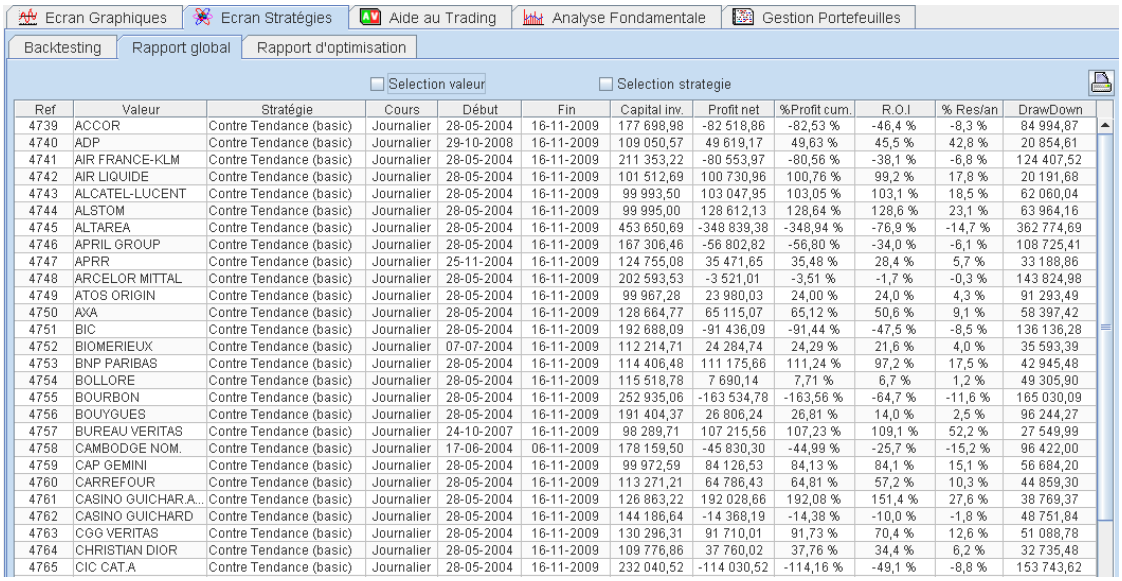
This fourth table recalls the *strategy* applied along with the parameters and conditions of the trial.

6.4. General tables for all strategy trials

All trials performed during the session or kept in memory for all *strategies* and for all stocks are viewable in two tables present in ***Strategy Screen***: The table titled *Global Report* and the one titled *Optimization Report*.

To access these tables, select ***Strategy Screen*** at the top of the screen then the ***Global Report*** tab or the ***Optimization Report*** tab.

6.4.1. Global Report



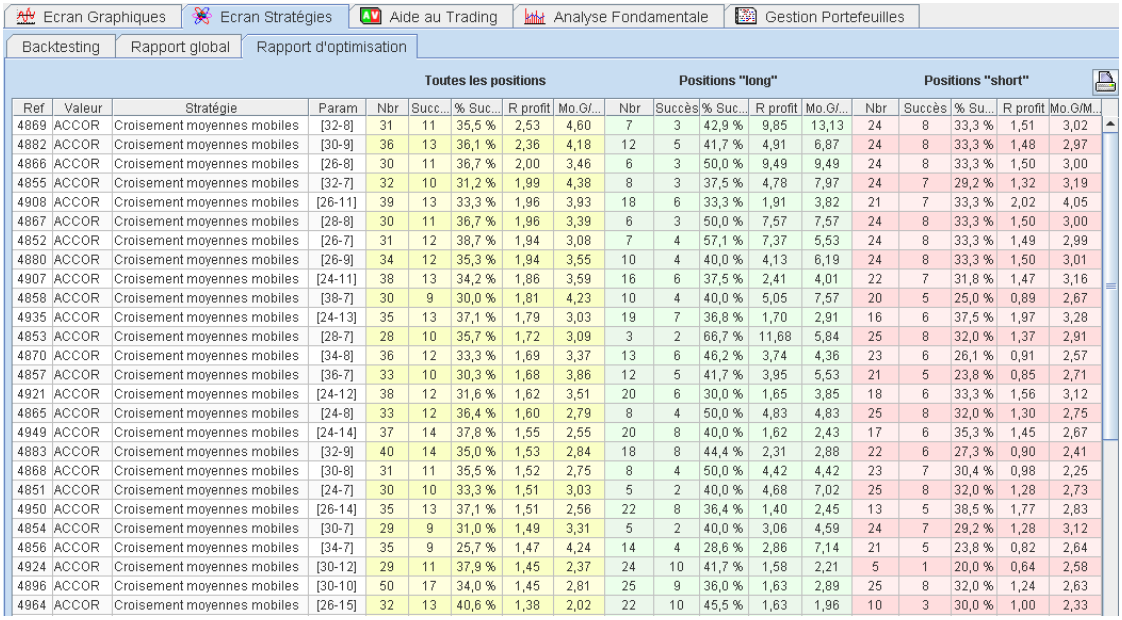
Ref	Valeur	Stratégie	Cours	Début	Fin	Capital inv.	Profit net	%Profit cum.	R.O.I	% Res/an	DrawDown
4739	ACCOR	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	177 698,98	-82 518,86	-82,53 %	-46,4 %	-8,3 %	84 994,87
4740	ADP	Contre Tendance (basic)	Journalier	29-10-2008	16-11-2009	109 050,57	49 619,17	49,63 %	45,5 %	42,8 %	20 854,61
4741	AIR FRANCE-KLM	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	211 353,22	-80 553,97	-80,56 %	-38,1 %	-6,8 %	124 407,52
4742	AIR LIQUIDE	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	101 512,69	100 730,96	100,76 %	99,2 %	17,8 %	20 191,68
4743	ALCATEL-LUCENT	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	99 993,50	103 047,95	103,05 %	103,1 %	18,5 %	62 060,04
4744	ALSTOM	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	99 995,00	128 612,13	128,64 %	128,6 %	23,1 %	63 964,16
4745	ALTAREA	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	453 650,69	-348 839,38	-348,94 %	-76,9 %	-14,7 %	362 774,69
4746	APRIL GROUP	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	167 306,46	-56 802,82	-56,80 %	-34,0 %	-6,1 %	108 725,41
4747	APRR	Contre Tendance (basic)	Journalier	25-11-2004	16-11-2009	124 755,08	35 471,65	35,48 %	28,4 %	5,7 %	33 188,86
4748	ARCELOR MITTAL	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	202 593,53	-3 521,01	-3,51 %	-1,7 %	-0,3 %	143 824,98
4749	ATOS ORIGIN	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	99 967,28	23 980,03	24,00 %	24,0 %	4,3 %	91 293,49
4750	AXA	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	128 664,77	65 115,07	65,12 %	50,6 %	9,1 %	58 397,42
4751	BIC	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	192 688,09	-91 436,09	-91,44 %	-47,5 %	-8,5 %	136 136,28
4752	BIOMERIEUX	Contre Tendance (basic)	Journalier	07-07-2004	16-11-2009	112 214,71	24 284,74	24,29 %	21,6 %	4,0 %	35 593,39
4753	BNP PARIBAS	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	114 406,48	111 175,66	111,24 %	97,2 %	17,5 %	42 945,48
4754	BOLLORE	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	115 518,78	7 690,14	7,71 %	6,7 %	1,2 %	49 305,90
4755	BOURBON	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	252 935,06	-163 534,78	-163,56 %	-64,7 %	-11,6 %	165 030,09
4756	BOUYGUES	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	191 404,37	26 806,24	26,81 %	14,0 %	2,5 %	96 244,27
4757	BUREAU VERITAS	Contre Tendance (basic)	Journalier	24-10-2007	16-11-2009	98 289,71	107 215,56	107,23 %	109,1 %	52,2 %	27 549,99
4758	CAMBODGE NOM.	Contre Tendance (basic)	Journalier	17-06-2004	06-11-2009	178 159,50	-45 830,30	-44,99 %	-25,7 %	-15,2 %	96 422,00
4759	CAP GEMINI	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	99 972,59	84 126,53	84,13 %	84,1 %	15,1 %	56 684,20
4760	CARREFOUR	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	113 271,21	64 786,43	64,81 %	57,2 %	10,3 %	44 859,30
4761	CASINO GUICHAR.A...	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	126 863,22	192 028,66	192,08 %	151,4 %	27,6 %	38 769,37
4762	CASINO GUICHARD	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	144 186,64	-14 368,19	-14,38 %	-10,0 %	-1,8 %	48 751,84
4763	CGG VERITAS	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	130 296,31	91 710,01	91,73 %	70,4 %	12,6 %	51 088,78
4764	CHRISTIAN DIOR	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	109 776,86	37 760,02	37,76 %	34,4 %	6,2 %	32 735,48
4765	CIC CAT.A	Contre Tendance (basic)	Journalier	28-05-2004	16-11-2009	232 040,52	-114 030,52	-114,16 %	-49,1 %	-8,8 %	153 743,62

This table displays the main results of each trial.

It allows for the following operations:

1. Access the detailed report of the trial by double-clicking on the corresponding line.
2. Sort the table rows according to result ratios: Double-click on the column header.
3. Reduce the table to trials for a single stock: Select a row with that stock and then check the ***Select Stock*** box at the top of the table.
4. Reduce the table to trials for a single *strategy*: Select a row with that *strategy* and then check the ***Select Strategy*** box at the top of the table.
5. Clear results: select the result row(s) to clear and then press the **Delete** key on the keyboard, or open the context menu by right-clicking and choose the ***Clear*** option.

6.4.2. Optimization Report



				Toutes les positions					Positions "long"					Positions "short"				
Ref	Valeur	Stratégie	Param	Nbr	Succ...	% Suc...	R profit	Mo.G/...	Nbr	Succès	% Suc...	R profit	Mo.G/...	Nbr	Succès	% Su...	R profit	Mo.G/M...
4869	ACCOR	Croisement moyennes mobiles	[32-8]	31	11	35,5 %	2,53	4,60	7	3	42,9 %	9,85	13,13	24	8	33,3 %	1,51	3,02
4882	ACCOR	Croisement moyennes mobiles	[30-9]	36	13	36,1 %	2,36	4,18	12	5	41,7 %	4,91	6,87	24	8	33,3 %	1,48	2,97
4866	ACCOR	Croisement moyennes mobiles	[26-8]	30	11	36,7 %	2,00	3,46	6	3	50,0 %	9,49	9,49	24	8	33,3 %	1,50	3,00
4855	ACCOR	Croisement moyennes mobiles	[32-7]	32	10	31,2 %	1,99	4,38	8	3	37,5 %	4,78	7,97	24	7	29,2 %	1,32	3,19
4908	ACCOR	Croisement moyennes mobiles	[26-11]	39	13	33,3 %	1,96	3,93	18	6	33,3 %	1,91	3,82	21	7	33,3 %	2,02	4,05
4867	ACCOR	Croisement moyennes mobiles	[28-8]	30	11	36,7 %	1,96	3,39	6	3	50,0 %	7,57	7,57	24	8	33,3 %	1,50	3,00
4852	ACCOR	Croisement moyennes mobiles	[26-7]	31	12	38,7 %	1,94	3,08	7	4	57,1 %	7,37	5,53	24	8	33,3 %	1,49	2,99
4880	ACCOR	Croisement moyennes mobiles	[26-9]	34	12	35,3 %	1,94	3,55	10	4	40,0 %	4,13	6,19	24	8	33,3 %	1,50	3,01
4907	ACCOR	Croisement moyennes mobiles	[24-11]	38	13	34,2 %	1,86	3,59	16	6	37,5 %	2,41	4,01	22	7	31,8 %	1,47	3,16
4858	ACCOR	Croisement moyennes mobiles	[38-7]	30	9	30,0 %	1,81	4,23	10	4	40,0 %	5,05	7,57	20	5	25,0 %	0,89	2,67
4935	ACCOR	Croisement moyennes mobiles	[24-13]	35	13	37,1 %	1,79	3,03	19	7	36,8 %	1,70	2,91	16	6	37,5 %	1,97	3,28
4853	ACCOR	Croisement moyennes mobiles	[28-7]	28	10	35,7 %	1,72	3,09	3	2	66,7 %	11,68	5,84	25	8	32,0 %	1,37	2,91
4870	ACCOR	Croisement moyennes mobiles	[34-8]	36	12	33,3 %	1,69	3,37	13	6	46,2 %	3,74	4,36	23	6	26,1 %	0,91	2,57
4857	ACCOR	Croisement moyennes mobiles	[36-7]	33	10	30,3 %	1,68	3,86	12	5	41,7 %	3,95	5,53	21	5	23,8 %	0,85	2,71
4921	ACCOR	Croisement moyennes mobiles	[24-12]	38	12	31,6 %	1,62	3,51	20	6	30,0 %	1,65	3,85	18	6	33,3 %	1,56	3,12
4865	ACCOR	Croisement moyennes mobiles	[24-8]	33	12	36,4 %	1,60	2,79	8	4	50,0 %	4,83	4,83	25	8	32,0 %	1,30	2,75
4949	ACCOR	Croisement moyennes mobiles	[24-14]	37	14	37,8 %	1,55	2,55	20	8	40,0 %	1,62	2,43	17	6	35,3 %	1,45	2,67
4883	ACCOR	Croisement moyennes mobiles	[32-9]	40	14	35,0 %	1,53	2,84	18	8	44,4 %	2,31	2,88	22	6	27,3 %	0,90	2,41
4868	ACCOR	Croisement moyennes mobiles	[30-8]	31	11	35,5 %	1,52	2,75	8	4	50,0 %	4,42	4,42	23	7	30,4 %	0,98	2,25
4851	ACCOR	Croisement moyennes mobiles	[24-7]	30	10	33,3 %	1,51	3,03	5	2	40,0 %	4,68	7,02	25	8	32,0 %	1,28	2,73
4950	ACCOR	Croisement moyennes mobiles	[26-14]	35	13	37,1 %	1,51	2,56	22	8	36,4 %	1,40	2,45	13	5	38,5 %	1,77	2,83
4854	ACCOR	Croisement moyennes mobiles	[30-7]	29	9	31,0 %	1,49	3,31	5	2	40,0 %	3,06	4,59	24	7	29,2 %	1,28	3,12
4856	ACCOR	Croisement moyennes mobiles	[34-7]	35	9	25,7 %	1,47	4,24	14	4	28,6 %	2,86	7,14	21	5	23,8 %	0,82	2,64
4924	ACCOR	Croisement moyennes mobiles	[30-12]	29	11	37,9 %	1,45	2,37	24	10	41,7 %	1,58	2,21	5	1	20,0 %	0,64	2,58
4896	ACCOR	Croisement moyennes mobiles	[30-10]	50	17	34,0 %	1,45	2,81	25	9	36,0 %	1,63	2,89	25	8	32,0 %	1,24	2,63
4964	ACCOR	Croisement moyennes mobiles	[26-15]	32	13	40,6 %	1,38	2,02	22	10	45,5 %	1,63	1,96	10	3	30,0 %	1,00	2,33

This table is specifically dedicated to comparing the results of a strategy applied to a stock, a strategy whose parameters vary according to a variability profile defined by the user (see the paragraph below Defining parameter variability).

This table indicates for all trials:

- in the *param* column, the set of parameters applied
- and for all open positions, in particular in the cases of *Long* and *Short*:
  i. The total number of open positions in the *Nbr* column
  ii. The number of winning positions in the *Success* column
  iii. The % of winning positions in the *% Success* column
  iv. The profit ratio in the *R profit* column
  v. The ratio of average wins over average losses in the *M.W/L P.* column

To obtain the set of parameters providing the best result, click on the *R profit* column header to sort trials by descending profit result.

7. Comparison of strategies

7.1. Generalities

In the ***Strategy Screen*** module, ***Axial Finance*** simultaneously applies one or more *strategies* to one or a set of stocks in order to obtain on a single chart the plots of the *equity curves* and the *maximum drawdown*.

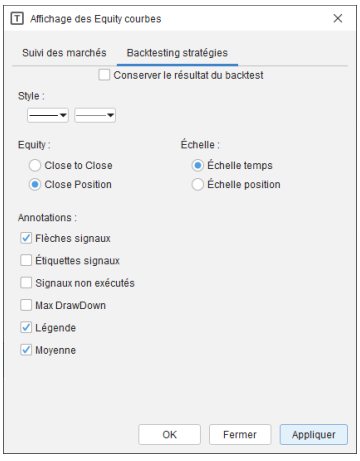
Three modes are available:

1. The mode called **Stocks compared**: a single *strategy* is applied to a list of stocks,
2. The mode called **Strategies compared**: several *strategies* are applied to the same stock,
3. The mode called **Variable parameters**: a single *strategy* is applied to a stock, while step-by-step varying the parameters of the *indicators* contained in the *rules* of this *strategy*.

Detailed results are available in the global trials table.

7.2. Customizing strategy result display in the chart

To customize the display of the result in ***Strategy Screen***, in the general ***Preferences*** menu, choose the option ***Strategy Charts*** to open the dialog window below. Select the ***Strategy Screen*** tab:

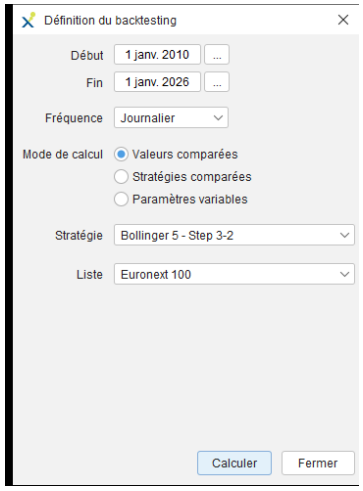


- To retain the results of the *strategies* in memory, check the ***Keep backtest result*** box; otherwise these results will be lost when the application is closed.
- In order to compare results across securities, the vertical scale is set by default as a percentage of cumulative gains. The meaning of cumulative gains percentage is as follows: Each time a position is closed, the gain (or loss) is calculated as a percentage of the opening price of that position. These gains (or losses) are then accumulated.

- You can choose whether or not to plot the potential value of the *equity curve* at each *bar* while positions are open. These are the two modes: Equity in "Close to Close" or in "Close Position".
- The horizontal scale can be proportional to time (check ***Time Scale***) or proportional to the number of positions (check ***Position Scale***).
- To request the drawing of vertical arrows indicating the opening and closing of positions, check ***Signal Arrows***.
- To display alongside the above arrows the type of position ("long" or "short") and the number of shares, check ***Signal Labels***.
- When a position is open, new opening *signals* have no effect. Likewise, when a position is closed, new closing *signals* have no effect. These unexecuted *signals* can be plotted on the chart as dashed arrows. Check the ***Unexecuted Signals*** box.
- The *maximum drawdown* can be displayed on the chart. Check the ***Max DrawDown*** box.
- A legend recalling the *strategy* that was run can also be displayed. Check the ***Legend*** box.
- To display the average of the *equity curves* shown in the chart, check the ***Average*** box.

7.3. Choice of comparison conditions and launching the trial

Click on the **Choose** button at the top left of ***Strategy Screen*** to open the dialog window below:



- Fix the start and end dates.
- Specify the nature of the prices to use: "end of day" in ***Daily***, ***Weekly*** or ***Monthly*** or ***Intraday*** with the desired periodicity.
- Choose one of the three calculation modes, and then according to the mode:
  - With the ***Stocks compared*** mode, select the *strategy* to apply from the drop-down list ***Strategy*** as well as one of the stock lists in the third drop-down list.
  - With the ***Strategies compared*** mode, select the stock to use from the *Stock* drop-down list as well as the *strategies* by checking those requested.
  - With the ***Variable parameters*** mode, select the stock to use from the *Stock* drop-down list as well as the *strategy* to apply. Then, to define parameter variability, see the following section.

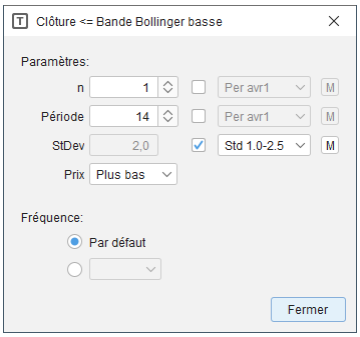
Then, to launch the calculation, click on the **Calculate** button in this window or on the one located at the top right of ***Strategy Screen***.

7.4. Defining the variability of rule parameters

To define the variable parameters in a *rule* of a *strategy* :

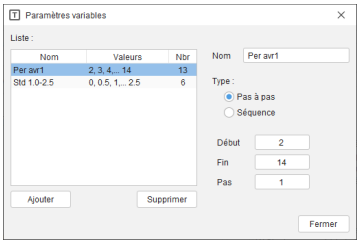
i. Open the strategy editing window by choosing in the general ***Trading System*** menu the option ***Edit Strategies***.
ii. Select the *strategy* from the library and then the *rule* in which the *signals* are to be parameterized.
iii. Double-click on the *signal* in the *rule* to open the parameter entry window.

Example of a signal parameter entry window:



1. To obtain a variable parameter, check the box next to this parameter and choose the variability profile from the associated drop-down list.
2. To create a new variability profile or to modify an existing one, click on the **...** button to open the window below.

Variability profiles definition window:



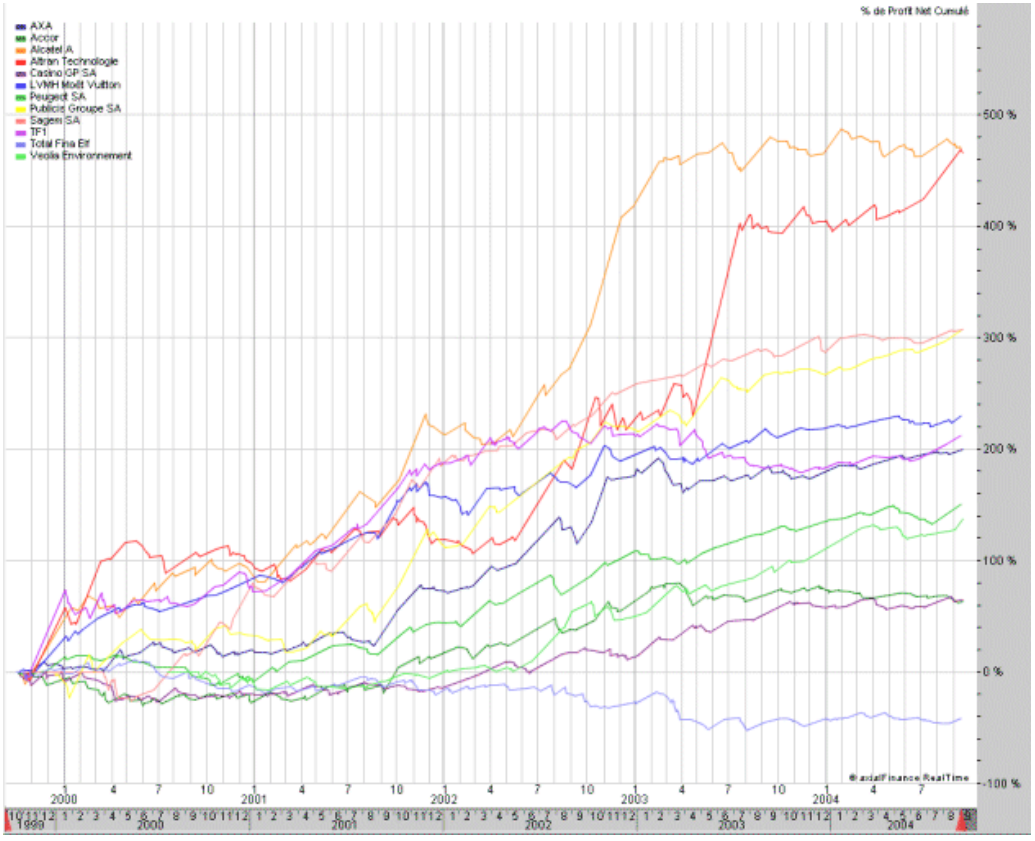
Axial Finance provides two types of profiles:

1. Either step-by-step between two extreme numbers
2. Or according to a sequence of discrete numbers

Click on the **New** button to add a profile, enter the profile name, choose the type and the various parameters defining the variation.

During trial execution, all combinations of numerical values of the variable parameters are successively taken into account. The number of charts obtained is equal to this number of combinations. The chart legend indicates the set of parameters corresponding to each curve.

7.5. Presentation of comparison in a chart



In the example above, a *strategy* was applied to a list of 12 stocks. The vertical legend on the left provides the list of these stocks.

By selecting a stock in the legend, the corresponding *equity curve* is highlighted by small rectangles.

By selecting a curve in the chart, the name of the stock in the legend is enclosed in a black frame.

By double-clicking on an *equity curve* or the stock name in the legend, the detailed report presentation window opens.

An *equity curve* can be removed from the chart: Select this curve and then open the context menu by right-clicking and click on the ***Delete*** option. In this case, the average curve (if displayed) is automatically recalculated.

Chapter 8. Order Placement

1. General Information

1.1. Introduction

Axial Finance allows for direct placement of stock orders to brokers with whom a secure Internet connection agreement has been established.

In addition to the accessible brokers, ***Axial Finance*** includes a ***broker simulation*** feature, allowing users to practice placing orders from the software without any financial commitment.

Order placement can be performed:

- either directly from a price chart (see paragraph Orders from a chart)
- or from the order book (see paragraph Orders from an order book)
- or automatically via a real-time strategy (see paragraph Orders from a real-time strategy)

Axial Finance also features an additional and independent *trading portfolio* from the portfolios available in the ***Portfolio Management*** screen.

Actual positions opened with the broker are displayed and updated in real-time within the *trading portfolio*.

> **Note**
>
> The purpose of the software is not to perform accounting management of orders with the *trading portfolio*; this is the responsibility of the broker. The primary purpose of this portfolio is to enable real-time monitoring of open positions and to know realized and potential gains at any time.

1.2. Choosing a Broker

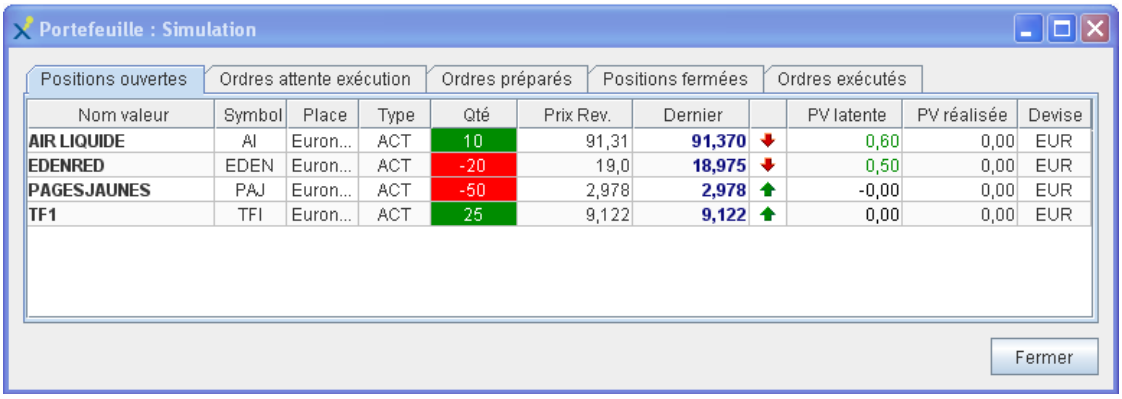
In the general ***Preferences*** menu, click on ***Broker Choice*** and enter the identifier and password used to connect to the broker.

The selected broker name and available accounts are displayed in the toolbar of the ***Market Monitoring*** section. In the example below, the broker Lynx is selected:

The secure connection with the broker is automatic. Once established, the broker's name appears on a green background. If the connection drops and the background turns red, click on the broker's name to reopen it.

1.3. Trading Portfolio

To open the *trading portfolio*, click on the button at the top of ***Market Monitoring***



The *trading portfolio* displays 5 lists including:

- Open positions
- Orders pending execution
- Prepared orders
- Closed positions
- Executed orders

1.4. Open Positions

The list of open positions (see above) displays the following information:

Instrument Name	The name of the instrument
Symbol	The mnemonic code of the instrument
Exchange	The exchange where the order was executed
Type	The type of instrument (see above)
Qty.	The quantity of instruments in the position, with a green background for "Long" (buy) and red for "Short" (sell)
Avg. Cost	The average cost of the quantity remaining in the position
Last	The last quoted price, updated in real-time A vertical arrow indicating whether the position is winning or losing for the quantity remaining in the position
Unrealized P/L	The unrealized profit/loss for the quantity remaining in the position, updated in real-time
Realized P/L	The profit/loss already realized from the position
Currency	The quoting currency of the instrument

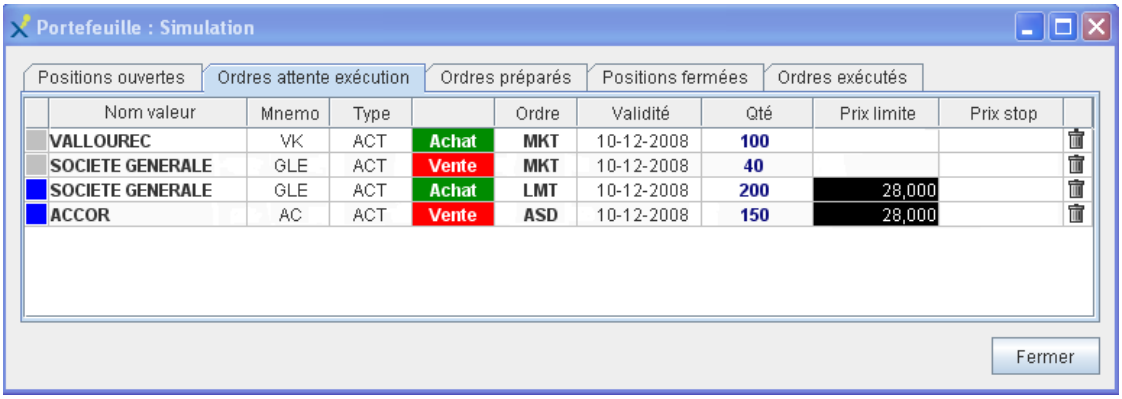
To send a position closing order to the broker, double-click on the position line to open the window that then allows you to request the transmission of the corresponding order.

1.5. Prepared Orders

Orders can be prepared and kept in memory in a waiting list before transmission.

To send a prepared order to the broker, double-click on the order line to open the order transmission window.

1.6. Orders Pending Execution



The list of transmitted orders pending execution displays the following information:

Order Status The order status is indicated in the first column by a color code defined in the following paragraph Order Color Codes

Instrument Name The name of the instrument

Symbol The mnemonic code of the instrument

Type The type of instrument is defined by the following labels:

- **ACT** for an Equity/Stock
- **FUT** for a Future contract
- **FRX** for Forex
- **WAR** for a Warrant
- **ROC** for an Exchange Rate
- **OPT** for an Option

Order Nature The nature of the order is defined by the color code: green for "Long" (buy) and red for "Short" (sell)

Order The type of order is defined by the following labels:

- **MKT** for a Market order
- **LMT** for a Limit order
- **ASD** for a Stop order
- **APD** for a Stop-Limit order

Validity The expiration date of the order's validity

Qty. The quantity of instruments

Limit Price The limit price

Stop The stop price

Last Column The last column allows you to cancel the prepared order by clicking on the corresponding box

1.7. Order Color Codes

The following color code is applied to specify the status of orders in charts:

Prepared order but not yet transmitted to the broker

Transmitted order but not yet acknowledged by the broker

Transmitted order, acknowledged and pending execution by the broker

Transmitted order but pending cancellation by the broker at the client's request

Transmitted order, acknowledged and cancelled by the broker

Transmitted order, acknowledged and fully executed by the broker

Transmitted order, acknowledged but became inactive at the broker

1.8. Executed Orders

1.9. Broker Simulation Feature

Axial Finance includes a ***broker simulation*** feature, which allows the user to practice placing orders from the software without taking any financial commitment.

The simulator executes received orders according to their type with a delay of a few seconds based on the last known price in the software. For example, for a stop order (ASD), the simulator waits until the last price reaches the limit price to execute it.

2. Orders from a Chart

2.1. General Information

Axial Finance allows you to place an order to the broker from the instrument's chart.

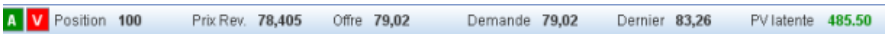
The *chart window* features a *trading zone* that allows you to open the order placement window.

The prepared or transmitted order, as well as the open position, are displayed in the *chart window* according to a color code specified below.

By double-clicking directly on the chart on the horizontal line representing the prepared order or the open position, the user requests that the broker execute the order.

2.2. Chart Window Trading Zone

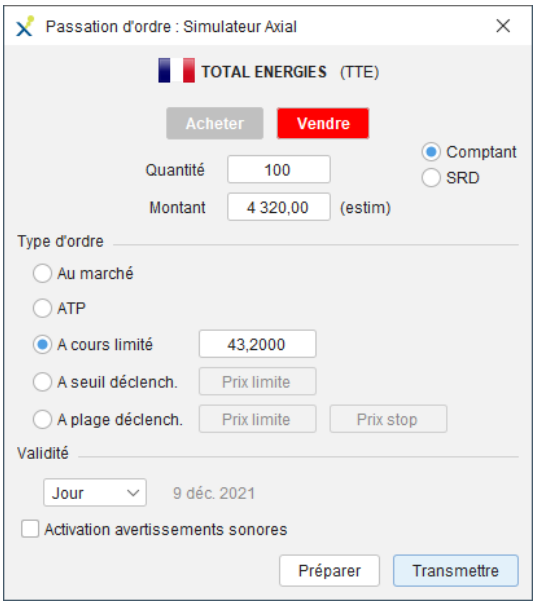
To open the *trading zone* which will appear at the top of the chart, click on the ***Add trading zone*** option in the ***View*** menu of the *chart window* or from its context menu (right-click in the chart).



This *trading zone* features two buttons + − to open the order placement window. In the event that a position is open for the instrument in the chart, it also displays prices from the real-time feed.

2.3. Preparing an Order

Click on the button in the *trading zone* corresponding to the nature of the order to be prepared, + for a buy order or − for a sell order. The order placement window below will open.



This window displays the name, mnemonic code, and type of instrument.

Define the order to be placed:

i. by clicking on the **Buy** or **Sell** button
ii. by entering the ***Quantity of instruments***
iii. by selecting the ***Order Type***
iv. by selecting the ***Validity*** duration

Then click on the **Prepare** button to add this order to the list of prepared orders without transmitting it to the broker, or on **Transmit** for immediate transmission to the broker.

2.4. Display of the Order and Open Position in the Chart

The chart displays the prepared or transmitted order as well as the open position as follows:

2.4.1. Prepared Order

A prepared order is displayed as a light gray dotted line. The color of the line depends on the status of the order (see the color code defined in the paragraph Order Color Codes).

To the left of this line, the order type and the requested quantity are displayed.

> **Important**
>
> For an order not yet transmitted to the broker, it is possible to modify the price on the chart by vertically dragging the price line with the mouse.

2.4.2. Open Position

An open position is displayed as a solid line of the color corresponding to the nature of the order and with the symbol ***P*** to its left (to represent an open position), the quantity of instruments, and the % of potential profit updated in real-time.

To place a closing order for this position, left-click on the line of this position. The order placement window (see above) opens. Modify the order details if necessary, then click on the **Transmit** button.

3. Orders from an Order Book

3.1. General Information

Axial Finance allows for the placement of **LMT** or **ASD** type orders to the broker from the instrument's *order book*.

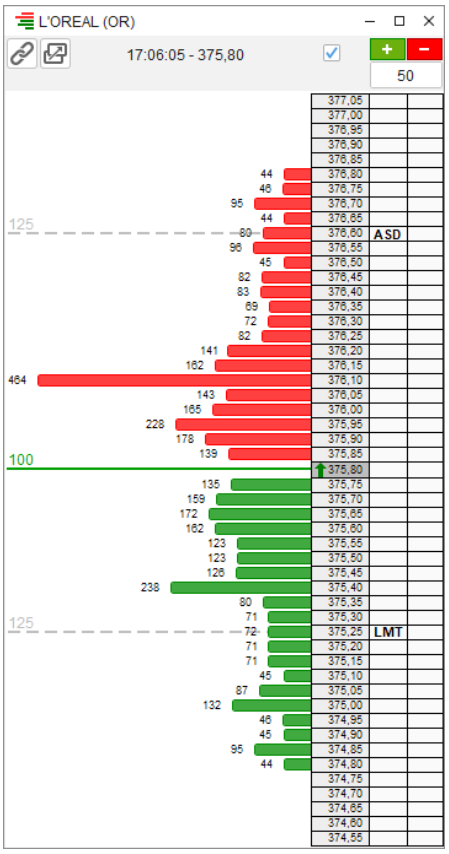
The order book features a *trading zone* to open the order placement window.

The prepared or transmitted order, as well as the open position, are displayed in the order book using the same color code as for orders placed from a chart.

By double-clicking directly on the horizontal line representing the prepared order or the open position in the order book, the user requests that the broker execute the order.

3.2. Order Book Trading Zone

To open the *trading zone* located vertically to the right of the chart, check the box present at the top of the vertical scale of the book.



This *trading zone* features two columns + for a buy order and − to place a buy or a sell. These two columns possess a *tick size* box to define the order price by clicking inside it.
The quantity of instruments can be prepared by entering it in the available field at the top of the *trading zone*.

3.3. Preparing an Order and Transmission to the Broker

Click on the desired price level box in the *trading zone* corresponding to the nature of the order to be prepared, + for a buy order or − for a sell order.

By convention, a **left-click** of the mouse prepares an **LMT** type order, and a **right-click** an **ASD** type order.

A prepared order is displayed as a light gray dotted line. The color of the line depends on the status of the order (see the color code defined in the paragraph Order Color Codes). To the left of this line, the requested quantity is displayed.

Important

For an order not yet transmitted to the broker, it is possible to modify the price on the book by vertically dragging the price line with the mouse.

To transmit the prepared order to the broker, left-click on the box in the *trading zone* column to open the order placement window. Modify the order details if necessary, then click on the **Transmit** button.

An open position is displayed as a solid line of the color corresponding to the nature of the order with the quantity of the position to its right.

4. Orders from a real-time executed strategy XM

4.1. General Information

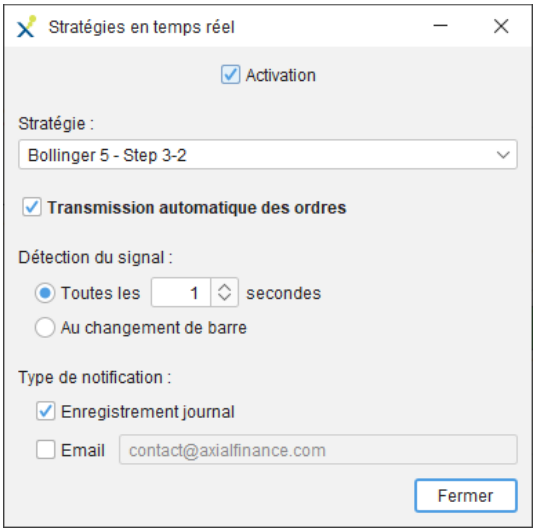
The **Maestro** and **Global Trader** versions allow the real-time execution of *strategies* whose position opening and closing signals are displayed on the chart in the same way as during a backtest of a *strategy* in a chart (see paragraph Equity curve in the main chart).

The ***broker simulation*** feature allows for automatic order placement based on signals generated by the strategy. Transmitted orders, executed orders, and the status of open positions are automatically recorded in the *trading portfolio*.

> **Important**
>
> For automatic order placement to one of the brokers directly accessible from ***Axial Finance***, a prior agreement with ***Ariane Software*** must be concluded.

4.2. Defining Real-Time Strategy Execution

In the ***View*** menu of the *chart window*, choose the option ***Real-time Strategies*** to open the definition window below.



Choose the *strategy* from the drop-down list among those present in the software library.

Optionally check the ***Automatic order transmission*** box. When this box is unchecked, only strategy signals are displayed in the chart.

Define the ***Signal detection*** mode for opening and closing positions:

- ***Every (n) seconds***
- ***On bar change***

Define the ***Notification type*** in addition to the graphical display.

Check the ***Activation*** box.

4.3. Real-Time Execution

When a *strategy* is activated for real-time execution, an icon and a button appear side by side and centered in the title bar of the chart. The icon indicates that a strategy is active. The button is used to start and stop the operation of the *strategy* in real-time.

By clicking this button, it turns green and execution begins.

On the chart, opening and closing signals appear along with the level of the open position including the quantity of instruments and the % of potential profit. These signals are kept in memory and re-displayed in the chart upon subsequent software openings when the strategy that generated them is activated in the chart. To remove these signals, click on the ***Clear signals*** option from the ***View*** menu of the chart.

At the bottom left of the chart, a label displays the name of the *strategy* along with the *Automatic order transmission* mention if applicable.

Important

For ***Signal detection*** using the ***Every (n) seconds*** choice, it is important that the chosen frequency is compatible with the speed of price changes to be able to detect a *signal* whose duration is brief from one transaction to the next.