Operational Methodology and Calculation of Simulations

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Change log

16/02/2025: Version 1 – First Publication

02/01/2026: Version 2

- introduction of the operational logic of the so-called “Agent Mode”
- update and revision of the simulation logic

18/02/2026: Version 2.1 – Correction of typos, grammatical errors and cross-references pointing to incorrect or missing paragraphs.

10/03/2026: Version 2.2 – Added FTSE100 and FTSE-MIB instruments

16/04/2026: Version 2.3 – Added SOLANA instrument

26/05/2026: Version 2.4

- Rewrite of the section “2. Methodology for development, testing and validation of the models”, with a generic definition of the training / validation / walk-forward windows.
- Added new Table 2.
- Updated execution times of the price-loading and forecast-calculation jobs.

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Introduction

Penelope, our proprietary AI platform (hereinafter "Penelope"), is based on a sophisticated architecture that comprises several specialised Artificial Intelligence models, each focused on a specific aspect of market analysis.

This integrated approach enables us to provide market-positioning signals over time horizons of 1, 3 and 5 days.

This document is drafted solely for the purpose of providing the user with a descriptive guide to how the Agent Mode system works, and to the method used to compute and publish the simulations available on the Penelope platform in the Simulations section.

It is expressly understood that this document does not constitute any guarantee of financial performance, nor may it be interpreted as an exhaustive description of the workings of the platform, of the AI, of the agents and/or of the operational logic. Trading may differ from a real environment for multiple reasons, including, by way of example only, the execution price, slippage, the bid/ask spread, execution costs, and so on.

Manual-trading behaviour is not taken into account in the calculation of the simulations; any references to Manual Mode are for descriptive purposes only.

Penelope does not provide financial advice or recommendations in the financial sphere, and all techniques and indications contained in this document may not be construed as a recommendation or advisory service.

Model Overview

Model Architecture

- AI for Market Sentiment Analysis:
    - **Purpose**: this model analyses market sentiment by aggregating and interpreting data from a variety of sources, including news, social media and market reports.
    - **Output**: a sentiment score indicating the overall mood of the market (positive, neutral or negative).
- AI for Market Data Analysis
    - **Purpose**: it examines current market data, such as price movements, trading volumes and volatility.
    - **Output**: analytical insights based on market conditions at the date and time of calculation.

- AI for Macroeconomic Data Analysis
    - **Purpose**: it evaluates macroeconomic indicators, including GDP growth rates, employment statistics and interest rates.
    - **Output**: a macroeconomic analysis that influences market performance.
- AI for Technical Analysis
    - **Purpose**: it uses technical-analysis indicators such as, by way of example only, moving averages, RSI (Relative Strength Index), MACD (Moving Average Convergence Divergence) and others.
    - **Output**: technical signals based on patterns and trends of historical prices.

Methodology for development, testing and validation of the models

For each Artificial Intelligence model used by the system, a structured methodology has been adopted, based on three distinct, contiguous and non-overlapping time windows, in order to prevent look-ahead bias and data leakage between the development, testing and operational phases:

- Training and validation phase (in-sample). The model is designed, calibrated and validated exclusively on historical data preceding a training cut-off date (T_0), defined specifically for each model.
- Out-of-sample testing phase. The predictive ability of the model is verified over a time interval subsequent to T_0 and preceding a date T_1, made up of observations not used in any design or calibration phase.
- Production-environment simulation phase (forward testing). The model is subjected to simulated execution on data never observed in the previous phases, in a window extending from T_1 up to the production release date (T_2) of the model itself.

The dates T_0, T_1 and T_2 are defined specifically for each model and may differ depending on the underlying financial instrument, the reference timeframe and the moment of development of the model within the system's life cycle. Such specificity is preserved and tracked in the performance reporting, consistent with the principles of fair representation and full disclosure.

This methodology aims to increase the reliability and accuracy of our AI models before signals are generated in the production environment.

Signal Generation

The data produced by the specialised AI models may or may not, depending on the asset and on the configuration of the model, be used to create the signal that synthesises the information in order to generate an overall market signal, indicating whether to take a long or short position.

The signal-generation process is scheduled once a day at 06:10 CET and is normally made available on the platform at 06:30 CET. Any technical issues may affect the proper timing and proper updating of the forecasts.

Operational Functioning

Operational model of the platform

The platform may be used in manual mode or, alternatively, the client may delegate operational activity by configuring the behaviour, activities and execution rules of an Agent.

In any event, the platform exercises no discretion in the execution of operations. In particular, timing and the ongoing management of positions are determined exclusively by predefined rules and by the parameters set by the client: execution is therefore rule-based and non-discretionary.

Operating with an Agent: where the client has configured an Agent, once the market signal has been generated it is transmitted to the trading module which, on a daily basis and according to the parameters set by the client, executes the relevant operation (a single operation per day), according to the times and operational windows indicated in Table 1 attached.

Single manual operation: where the client decides to enter a single operation in manual mode, the user selects the forecast time horizon (1, 3 or 5 days, the so-called Timeframe) and then proceeds to open the position by setting the order parameters. Once the period specified by the Timeframe has elapsed, the operation is closed automatically by the platform.

Please note: the platform executes only according to windows and parameters predefined by the user, with no discretionary optimisation activity and without carrying out activities attributable to best execution.

Management of Operations via Agent

Once a day, in accordance with the times defined in Table 1 and following the evaluation of the market forecast, the following operations may be carried out:

- Maintenance of the position: the position remains open where market conditions are consistent with the forecast and the Trailing Stop Loss has not been hit.
- Reversal of the position: where the forecast differs from that of the previous day, the position is reversed (closed and reopened) in accordance with the operational instructions defined by the client and with the Agent’s parameters.
- Reopening following Trailing Stop Loss: where the Trailing Stop Loss has been triggered, the operation is reopened on the following day, at the time indicated in Table 1, on the basis of the most recent market forecast.
- End of operations: the activity associated with the Agent ends on the expiry date of the validity period defined by the user, with the closing of the position and the interruption of operations.

The entire execution and management process is rule-based and non-discretionary: the platform operates exclusively according to predefined rules and parameters set by the client, with no discretion as to timing or ongoing management of operations.

This multi-layered AI-based approach allows for structured market analysis and for operational management consistent with the rules defined, helping to strengthen the decision-making process and risk management.

Calculation of Simulations

Calculation of Simulation Metrics

Our market simulation is designed to reflect the functioning of Agent Mode in a reference configuration. The simulation incorporates a simplified representation of the operational logic of Agent Mode, exclusively for the purposes of computing and displaying performance.

- **Simulation of Operations**:
  - Positions are opened in accordance with the direction forecast by the AI model.
  - The entry price is set at the arithmetic average of the OHLC of the second 15-minute period of the simulation window after the market opens (for continuously open markets, reference is made to the second 15-minute period of the day).
  - Operations are simulated using different Trailing Stop Losses.
  - The market data used for the simulation are provided by www.financialmodellingprep.com and are loaded every day at 06:07 CET.
- **Management of the Position** during the Period:
  - If the trailing stop loss is not triggered and there are no direction changes, the position remains open.
  - If a change of direction is required, the current position is closed and a new one is opened at the same time, according to the times defined in point 6.1 above.
  - In the simulation, a continuous exposure over time is maintained.
- **Trailing Stop Loss** trigger: if the trailing stop loss is triggered, the position is closed and a new position is opened on the following day on the basis of the new market forecast.
- **Calculation of simulated Performance**:
  - The simulation of each trade is calculated on the basis of the entry and exit prices, taking into account the impact of stop losses and position changes.
  - The aggregate analysis of the results provides a complete view of both the predictive models and risk management.

Please note that simulations may not be accurate for various reasons, including, by way of example and not limited to, the absence of market data, the presence of discontinuities in the historical series, or the unavailability of market forecasts. BXT shall not be held responsible for any errors, inaccuracies or omissions arising from technical issues, whether directly or indirectly attributable to BXT, which prevent the artificial-intelligence models from generating the expected indications. In addition,

BXT disclaims any responsibility for any shortcomings, inconsistencies or inaccuracies in the market data, in the information disseminated by selected providers, including, by way of example, false or misleading information (so-called “fake news”).

Simulation Charts

The simulation charts produced according to the methodology described above are merely indicative and represent a hypothesis of the potential performance of the investment in the event that orders had been executed in accordance with such calculation methodology.

Details concerning the direction of the trade, the AI model used and the Trailing Stop Loss (TSL) applied in the simulations are available in the chart tooltips, for each day and for each value of the equity line.

BXT does not include in its calculations either transaction costs or so-called slippage; therefore, the simulations shown in the charts are to be understood as being gross of commissions, operating costs and charges that the client may incur in executing operations.

Likewise, the simulations do not include the calculation of any capital gains and/or losses, nor the impact of taxes applicable to performance achieved. Consequently, the charts and performance data shown or reported on the website or on the Penelope platform, in any section or page thereof, do not constitute a definitive representation of the financial results actually achievable by the client.

Table 1: “Agent Mode” execution times

Name	Identifier	Orario (CET/CEST)
Bitcoin	BITCOIN	06:35:00
Brent Oil	BRENT	06:35:00
Dax 40	DAX	09:22:00
Ethereum	ETHUSD	06:35:00
Euro – Swiss Franc	EURCHF	06:35:00
Euro – British Pound	EURGBP	06:35:00
Eurostoxx	EUROSTOXX	09:22:00
Euro – US Dollar	EURUSD	06:35:00
FTSE 100	FTSE100	09:22:00
FTSE MIB	FTSEMIB	09:22:00
British Pound – US Dollar	GBPUSD	06:35:00
Gold	GOLD	06:35:00
Nasdaq 100	NDQ	15:47:00
SOLANA	SOLANA	06:35:00
Standard & Poor 500	SPX	15:47:00

Table 2: Trailing Stop Loss per instrument

Symbol	1D StopLoss	3D StopLoss	5D StopLoss
BITCOIN	1.75%	2.50%	1.75%
BRENT	0.55%	0.55%	1.75%
DAX	0.40%	0.40%	0.40%
ETHUSD	2.85%	2.85%	2.85%
EURCHF	0.20%	0.20%	0.20%
EURGBP	0.90%	0.70%	0.70%
EUROSTOXX	0.90%	0.90%	0.90%
EURUSD	0.30%	0.35%	0.30%
FTSE100	0.55%	0.55%	0.55%
FTSEMIB	0.70%	0.90%	0.90%
GBPUSD	0.90%	0.30%	0.30%
GOLD	1.10%	1.10%	1.50%
NDQ	1.75%	1.75%	1.75%
SOLANA	5.00%	5.00%	3.00%
SPX	0.40%	0.40%	0.40%