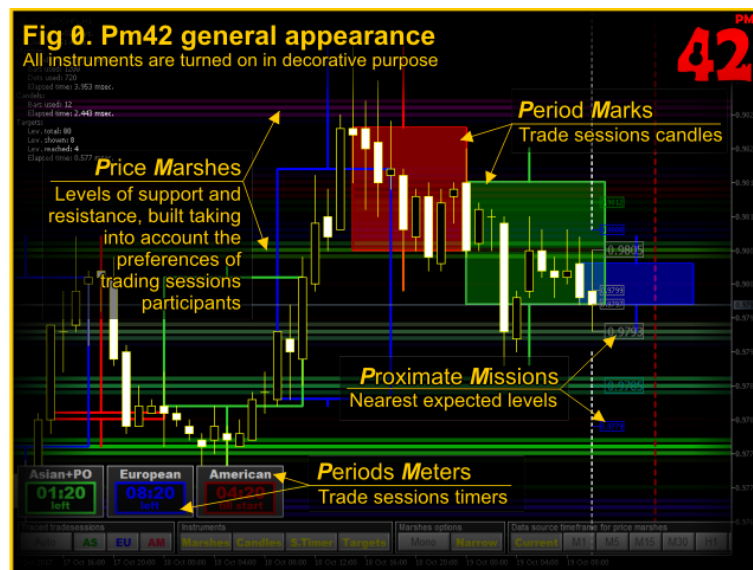


Pm42

Pm42 — A comprehensive tool for determining the levels of support, resistance, reversals in relation to trading sessions. The indicator's thesis can be expressed as follows:

"Support and resistance levels are undoubtedly formed by the psychological barriers of market participants, and influence the further behavior of the price. But these barriers are different for different groups of traders (One man's meat is another man's poison) and can be grouped by territory or by the trading time."

Following the thesis, the indicator detects levels and processes data separately for three trading sessions: Asian (including Pacific), European and American.



The indicator contains the following subsystems, which can be used either independently or in any combination :

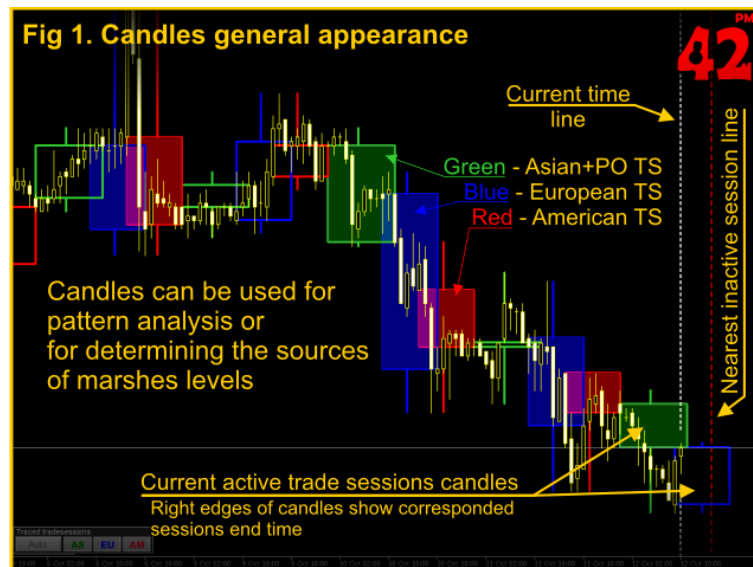
- **Period Marks : Candles of trading sessions** - group and display the data of each trading session in the form of a Japanese candle. Candles can be used for pattern analyze or to visually identify the signal source.
- **Price Marshes: Support and Resistance Levels** - displays support / resistance levels in the form of a gradient field of horizontal lines, the color of which depends on the trading sessions in which this level occurred. The color density is directly related to the number of confirmations of this level. The periods of the level sources can be selected from the range " M1" to " W1".
- **Proximate Missions: Nearest targets** - displays to the right of the last bar the value of the two nearest levels from the top and bottom. Levels are filtered by the current trading sessions (levels of inactive trading sessions are not displayed) from the Price Marshes data.
- **Periods Meters: Timers of trading sessions** - displays the status of trading sessions and the time before their start / end.
- **Predator Mask** - controls the display of sessions in the above tools, allowing you to view data only for selected (or excluding selected) trading sessions.

Description of indicator tools

Candles of trading sessions (Period Marks)

When building Japanese candles for trading sessions, the standard method is used:

- The OPEN price of a candle is equal to the OPEN price of the first bar of the trading session;
- The maximum of the candle and its minimum are determined by the maximum and minimum values of the price during the session;
- The CLOSE price of a candle is equal to the CLOSE price of the last bar that belongs to the trading session.



The color of the candle indicates the trading session for which it is built. The indicator uses the following definitions of trading sessions:

Trading sessions	Session time (GMT)	Color on the chart
Asian + Pacific	9.00 pm – 9.00 am	Green
European	6.00 am – 4.00 pm	Blue
American	12.00 am – 10.00 pm	Red

The indicator does not require input (and does not depend on the settings) of the offset of the server or local time, defining it automatically based on the data on trading activity.

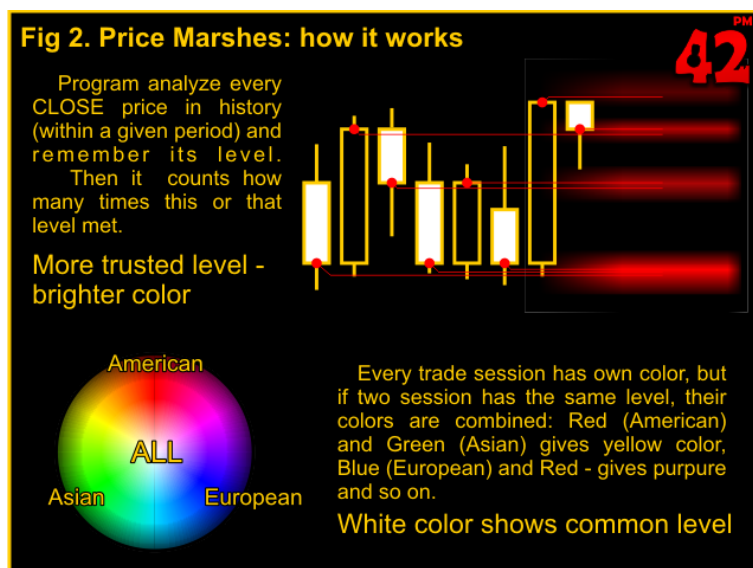
The candle of the current trading session is displayed the real width (its right edge is in the "future" relative to the current time bar), allowing you to visually determine the remaining time. Opening time of the next sessions is indicated in the form of vertical dotted lines of the corresponding color. The current time is indicated on the chart with a white vertical dotted line.

The display of the candles of specific sessions can be controlled using the Predator's Mask tool.

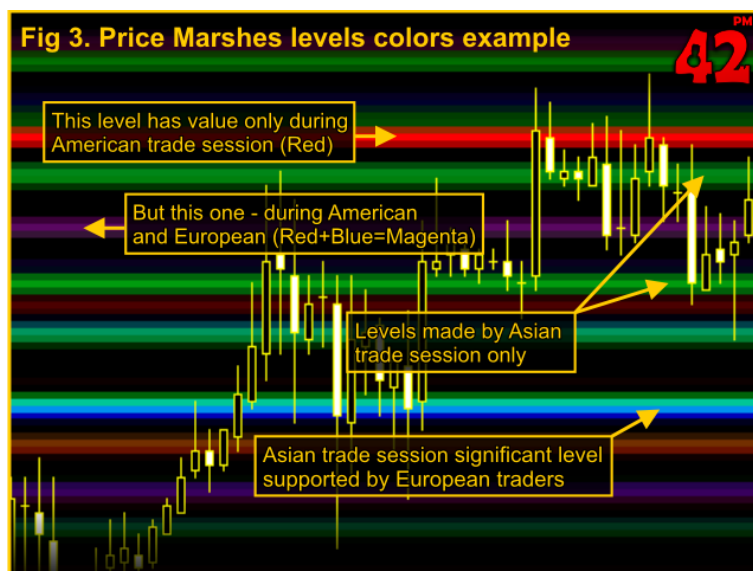
Support and resistance levels (Price Marshes)

The indicator uses the following algorithm to build support and resistance levels:

- CLOSE prices of all bars for the selected period are fixed (period is selected using the control panel of the indicator and by default is equal to the period of the chart) with the depth specified at start;
- The number of repetitions of each price is calculated (with some assumptions);
- Prices with the maximum number of confirmations create a level.



When displayed, the number of level confirmations determines the density of the color of the line displaying it: the more confirmed the level, the brighter its color. The color of weakly confirmed levels is close to black. The color hue is determined by the trading sessions in which it was confirmed (See figure below).

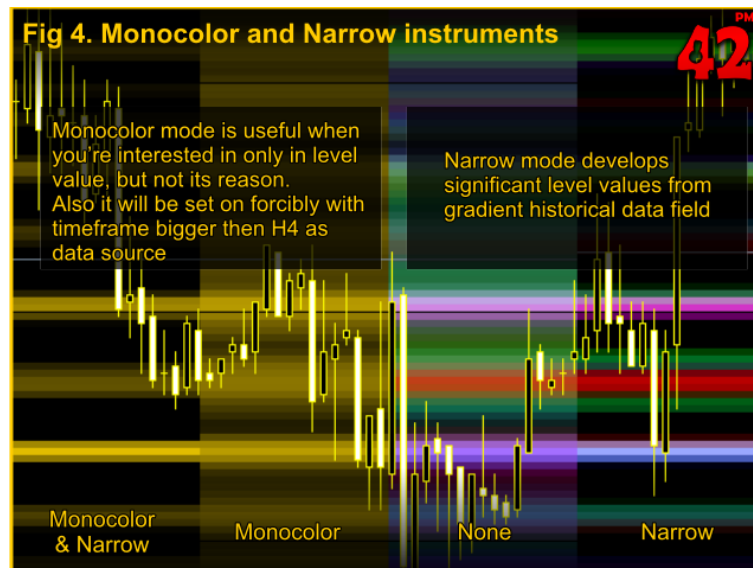


It follows from the above that the indicator operates only on historical data and can not predict the levels for prices that were not in the analyzed range. Approaching the boundaries of this range, the indicator signals «**Pretium ignotum!**».

Additional levels tools

As a result of the work, the indicator generates an almost continuous gradient field that reflects the distribution density of closing prices for trading sessions. It is difficult to single out specific levels applicable to trade from this information (despite this, the field is quite informative in order to study the behavior of the price). The **Narrow** tool allows you to "show" significant levels, visually increasing their visibility.

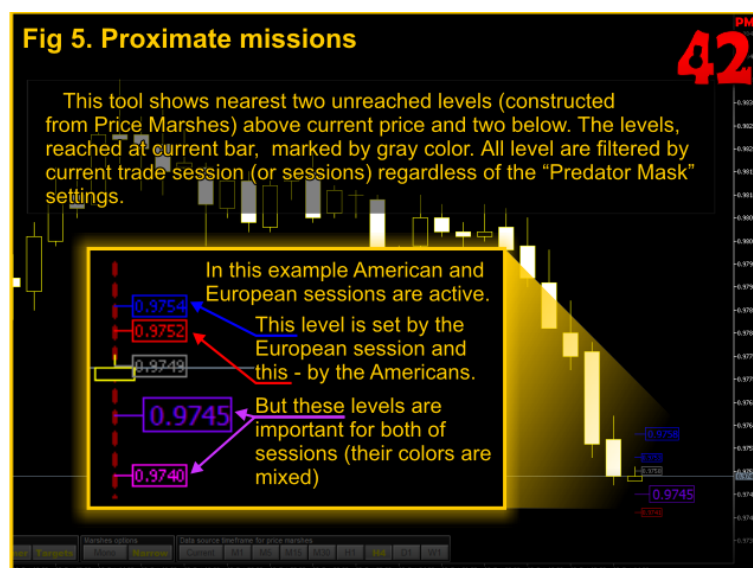
The **Monocolor** mode does not take into account the reason for the occurrence of the level. Also, if a period longer than "H4" was selected as the data source, the indicator automatically switches to the **Monocolor** mode because it is impossible to clearly define session boundaries for these periods.



Nearest targets (*Proximate Missions*)

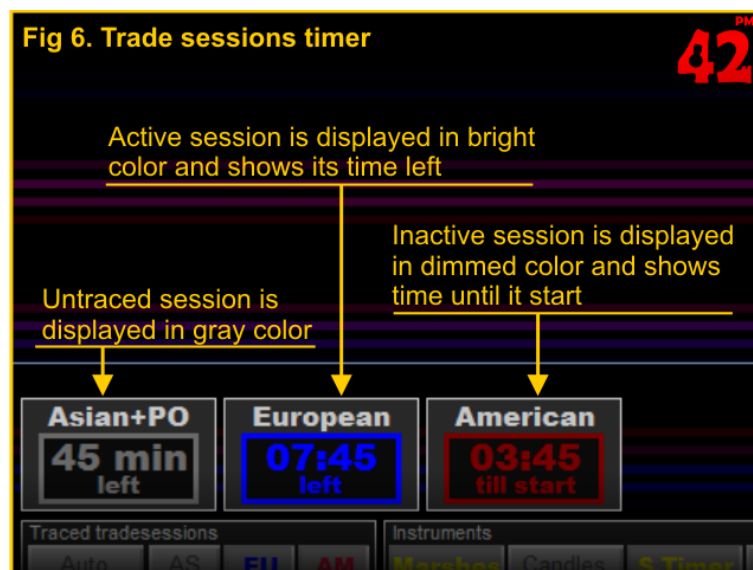
The "Nearest Targets" tool displays to the right of the current bar two closest support / resistance levels not reached at this bar, from above and below. The levels already reached are displayed in gray, the others by the color obtained by mixing the colors of the sessions that generated them. The size of the price label depends on the quality of the level confirmation. There may be three sizes: small - reliability less than a quarter of the maximum value, medium - less than half, large - reliable levels.

This tool displays levels only for active trading sessions, regardless of the Predator Mask settings.



Timers of trading sessions (Periods Meters)

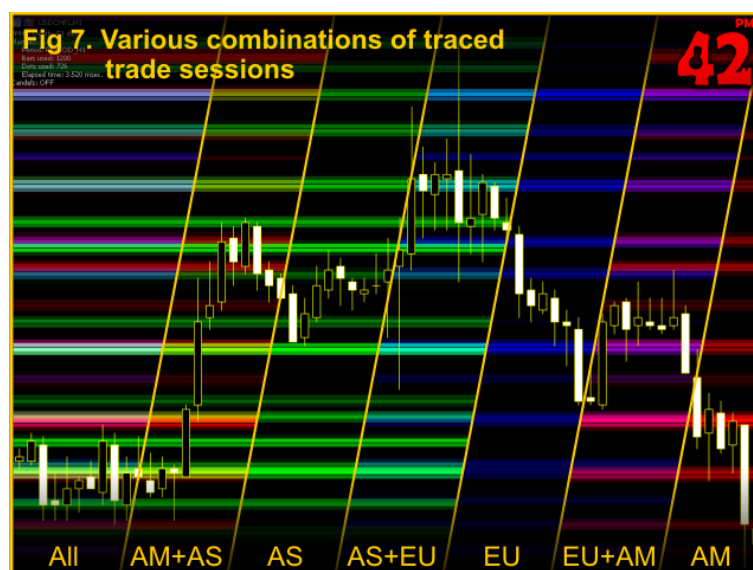
Designed to visualize the time remaining until the end of the trading session (for active sessions) or time before the session (for inactive). Active sessions are displayed in bright colors on numbers and a frame. Inactive sessions have a dimmed color. Sessions that are disabled by Predator Mask are shown in gray regardless of their activity.



Predator Mask

The Predator Mask tool is designed to control the display of trading sessions. This can be useful if you need to refine certain parameters or to filter out "noisy" data. The "AS", "EU", "AM" buttons on the lower left of the screen allow you to control the display of session data in the "Candles" and "Levels" tools.

The **Autotracking** mode switches the visibility of the data in accordance with the current activity of the trading sessions.



Using the indicator

Input parameters

The indicator uses the only input parameter " **Analysis depth (days)** ". Other settings and mode changes are made via the screen interface of the indicator.

- **Analysis depth (days)** - depth of analysis in days. The optimal parameters for different time periods of the graph are established empirically:

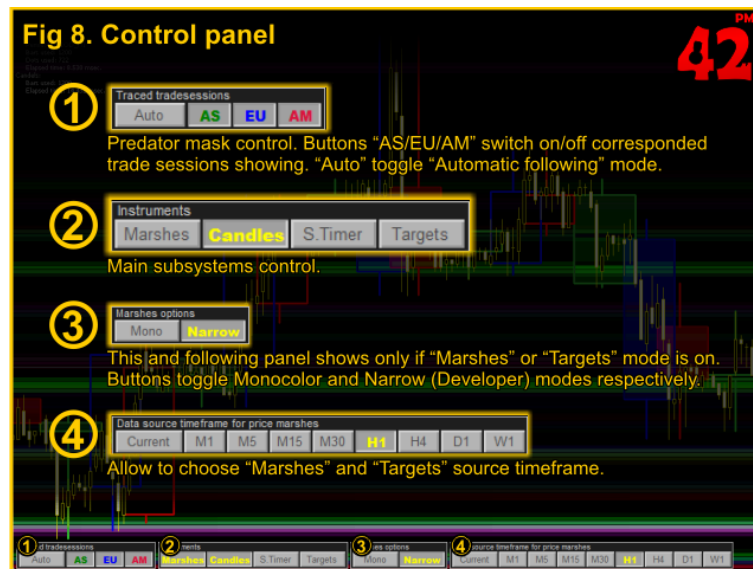
Chart period	"Analysis depth (days)" value	Number of bars analyzed
M5	20-30	5760-8640
M15	20-40	1920-3840
M30	25-50	1200-2400
H1	25-50	600-1200
H4	50-100	300-600
D1	250-300	250-300

An increase in the parameter above the indicated values usually does not lead to significant deviations in the exponents. A decrease leads to some distortion of the indicators, but sometimes it can be useful for clarifying short-term goals. The calculation boundary is visually displayed on the graph in the form of a vertical gray dotted line drawn through the last bar participating in the calculations.

Launching the indicator

To start the indicator, drag it from the navigator panel to the desired chart. At start, the indicator reads from 1 to 3 additional quotes (depending on the settings and modes), which takes some time (usually from 2 to 10 seconds).

Indicator uses the following default settings (they will also be used in the tester): Autotracking is on; Candles, Marshes, Timers and Targets are on; Narrow; data source timeframe is equal to the chart timeframe.



1) Predator Mask buttons

- «AS», «EU», «AM» – enable or disable the display of trading sessions (Asian, European and American, respectively) when displaying candles and support / resistance levels. You can use keyboard shortcuts Ctrl + 1, Ctrl + 2, Ctrl + 3.
- «Auto» – activates the autotracking mode. When the mode is enabled, the display of trading sessions will automatically switch along with the passage of time

2) Main subsystems control

- «Marshes» – toggles display of support / resistance levels «Price Marshes» (Ctrl+4)
- «Candles» – toggles display of Trading sessions Candles «Period Marks» (Ctrl+5)
- «S.Timer» – toggles display of times «Periods Meters» (Ctrl+6)
- «Targets» – toggles display of nearest targets «Proximate Missions» (Ctrl+7)

The following panels are present on the screen only if the "Marshes" or "Missions" modes are enabled

3) Level display modes

- «Mono» – toggles **Monocolor** mode
- «Narrow» – toggles **Narrow** mode

4) Selecting a data source period for building levels and targets

- «Current» – The period of the analyzed data coincides with the period of the chart. When the chart period is switched, the data source period also changes.
- «M1» - «W1» – the selected period of the analyzed data remains unchanged when the period of the chart is changed.

System messages

- **Time shift detecting...** – is displayed when the indicator is started while determining the server time offset relative to GMT.
- **[Symbol] [Period]: history loading...** – appears on the top of the chart when the indicator loads an additional history of the symbol when changing the indicator modes.
- **Session candels for [Period] period are not provided** – indicates the impossibility of building candles of trading sessions with the selected period of the chart (for periods over H4, a clear definition of the boundaries of trading sessions is impossible).
- **Pretium ignotum!** – Prices are unknown. The warning appears when the price is located near the boundaries of the analyzed price range or outside it: the indicator operates only with historical data and, under the specified conditions, can generate unreliable indications.

The mission of the indicator

The list of possible applications of indicators includes, but is not limited to, the following items:

- Studying the behavior of the market by newcomers;
- Study of the features of new characters for the professionals;
- Short-term trading from level to level;
- Help in determining the installation levels of TP and SL, pending orders;
- Show off to amateurs;
- Beautiful screensaver, when you turn on all subsystems.

Warnings

- Indicator inaccurately displays candles of trading sessions for instruments with incomplete trading schedule (trading sessions of which do not coincide with trading sessions of the Forex market);
- When working with the indicator, it should be remembered that the market is subject to fundamental influences, which the indicator cannot take into account. An indicator cannot serve as a basis for a trading strategy, but merely complements and verifies it.

The project is in the development stage and all your comments on the indicator's work, expressed in the [discussion](#), will be taken into account in future versions, possibly.