

‘Cash-is-King’ Expert Advisor (EA)

Req Specs for MT4

Idea behind EA

Built for trading on a Cash Account, where liquidity is not a problem, SWAP fees are offensive, and the trader is uncomfortable with short-selling. That means positions may be held longer than minutes or hours. That also means it's optimized for non-margin trading, which, for most brokers, comes with very low fees. Traditional buy-low-sell-higher is the idea, and short-selling isn't even considered. The indicator should be usable with any Symbol one's broker allows and might mean several trades each day, depending on volatility and preferences set in parameters, especially bar period. Parameterization must be simple, easy for the lay investor to understand and implement. Real-time, the indicator – when used in manual mode – must be easy to monitor current status, know what signal is sought next, and alert the user via tone with new signal or stage.

Operation of EA

The ‘guts’ of the EA have already been built: The “Cash-is-King” Template and Indicator. I commissioned creation of those and own the source code. The EA developer will add parameters and functionality, optimize for Manual and Automated modes of operation, and refine default parameters using retrospective testing on historical data.

Existing Indicator & Template Description with EA additions/edits (mostly) in blue


Idle Stage: Awaiting Buy Signals (background colored light gray on candlestick chart with overlaid William’s Alligator lines)

- Notification: ~~pop-up message, “Awaiting Buy Signal 1. Do NOT execute until Buy Signal 3!”~~
 - **Revise for EA: “Idle Stage: Awaiting MACD Buy Signal 1 (B1)”**

Status: No position held, monitoring bar openings for Buy Signal 1

Add to EA: Write journal message upon opening Indicator session: “SESSION START: Cash-is-King enabled at [Date-Time Stamp] on [Symbol] in [N-period] chart. Connected to [sever type, i.e., demo/live] server: [server name] with MT[version 4/5].” (If applied in Strategy Tester then add to journal, “(Strategy Tester: [its settings, i.e., dates, modeling mode, trading mode, initial deposit, etc.]”)

Buy Signal 1: MACD (26-period EMA) gray line *moving up* crosses the purple signal line (12-period EMA)


-  Insert dark yellow arrow to denote point on MACD chart where Buy Signal 1 triggered
 - Revise for EA: Change arrow color to dark green and, if possible, add “B1” label next to arrow

Buy Evaluation Stage (colored purple on candlestick chart)

Status: Initiated by trigger of Buy Signal 1 (B1), now monitoring for Buy Signal 2 (B2)

- Notification: tone alert (news.wav) and pop-up message, ~~“Monitoring for Buy Signal 2. Do NOT execute until Buy Signal 3!”~~
 - Revise for EA: “Buy Eval Stage: Awaiting Signal 2 (B2)”
- Add to EA: Write journal message with “Buy Signal 1 (B1) at [running time in minutes and seconds from session start]”


Buy Signal 2: Williams Alligator ‘Lips’ (5-bar SMMA) green line (overlying candle chart) *moving up crosses* the Williams Alligator ‘Jaws’ (13-bar SSMA) burnt orange line.

- Notification: tone alert (alert2.wav) and pop-up message, ~~“Monitoring for Buy Signal 3. Be prepared to execute!”~~
 - Revise for EA: “Buy Eval Stage: Awaiting Signal 3 (B3) to Execute!”
-  Blue arrow with “B2” to denote point on candlestick chart where Buy Signal 2 triggered
- Add to EA: Write journal message with “Buy Signal 2 (B2) at [running time in minutes and seconds from session start]”

Stage Ends with (a or b) or connection error:

a. Sell Signal 1 (see below) triggers before Buy Signal 3 triggers; returns chart to light gray color (Idle Stage)

- Notification: tone alert (ok.wav) and pop-up message, ~~“No go!” (and then Idle Stage notification)~~
 - i. Revise for EA: “S1 triggered before B3. Cycle starts over.”


-  Insert red arrow to denote point on MACD chart where Sell Signal 1 triggered
 - i. Revise for EA: if possible, add “S1” label next to arrow on MACD chart

Add to EA: Write journal message with “Buy Eval Stage Early Exit with Sell Signal 1 (S1) at [running time in minutes and seconds from session start]”

b. Buy Signal 3

Buy Signal 3: Alligator ‘Mouth Opening’ $\geq N$, where N is the “MinimumN_Pips” parameter the user can set (default is 10.0 Pips)

- Revise for EA: change name of parameter from “MinimumN_Pips” to “Min ‘Mouth Open’ Pips”
- Notification: tone alert (connect.wav) and pop-up message, ~~“BUY NOW!”~~
 - Revise for EA: “Position Held Stage: B3 triggered! Market Buy Executed. Awaiting Sell Signal 1 (S1).”

-  Insert dark green arrow with “**BUY**” to denote point on candlestick chart where Buy Signal 3 (B3) triggered
- **Add to EA:** Write journal message with “Buy Signal 3 (B3) and Buy Execution of [N Shares] at [Buy Price] at [running time in minutes and seconds from session start] with ‘Mouth Opening’ spread = N” where N is the actual Pip value at execution (which must be \geq N, set by user in “MinimumN_Pips” parameter)
- **Add to EA:** Cash used to make purchase = Cash Basis this session (user-set in parameter) + [Net profit this session]*[% of Running Total profit to reinvest] (user-set parameter where 0% = Fixed Lot, and 100% default is full reinvestment of net profits this session)


Actual Purchase: **Add to EA:** journal log: “Buy execution of [N Shares] at [Buy Price] at [running time in minutes and seconds from session start], for [\$N] total investment, which represents [\$N] Cash Basis plus Net Profit this session.”

Add to EA: Add parameter to standard Input section “Initial Buy SL in Pips”. User can set number of Pips that will trigger Stop Loss Sale following initial B3 purchase execution. If user sets parameter to 0 then no stop-loss will trigger; EA will await Sell Signal 2 (see below) to execute sale. Recommend larger SL Pip value but want retrospective testing to optimize value to use as default.

Position Held Stage (colored light green on candlestick chart)


Status: Initiated by Buy Signal 3 (B3) actual buy execution; now monitoring for Sell Signal 1.



Sell Signal 1: MACD (26-period EMA) gray line *moving down crosses* the purple signal line (12-period EMA).

- Notification: tone alert (wait.wav) and pop-up message, “~~Monitoring for Sell Signal 2. Be prepared to execute Sell!~~”
 - **Revise for EA:** “Still in Position Held Stage: Awaiting Sell Signal 2. Trailing Stoploss initiated.”
-  Insert red arrow to denote point on MACD chart where Sell Signal 1 triggered
 - **Add to EA:** add “**S1**” label next to red arrow on MACD chart
- Write journal message with “Sell Signal 1 (S1) at [running time in minutes and seconds from session start]”
- **Add to EA:** Trigger of Sell Signal 1 should always initiate parameter “Trailing SL in Pips.” Small number recommended (e.g., 5 Pips). Add “Trailing SL in Pips” parameter to standard Input page of EA.


Stage Ends with (a, b, c or d) or connection error:

a. Manual 1-click MT4 sell execution

-  Insert red arrow with “**MS**” to denote point on candlestick chart when Manual Sale (1-click sell) executed
- **Add to EA:** Write journal message with “Position Sold manually of [N Shares] at [Buy Price] at [running time in minutes and seconds from session start] for \$[total difference] P/L.” where [total difference] = ([N Shares Sold] * [Sell Price]) – ([Actual N Shares Bought] * [Actual Buy Price])

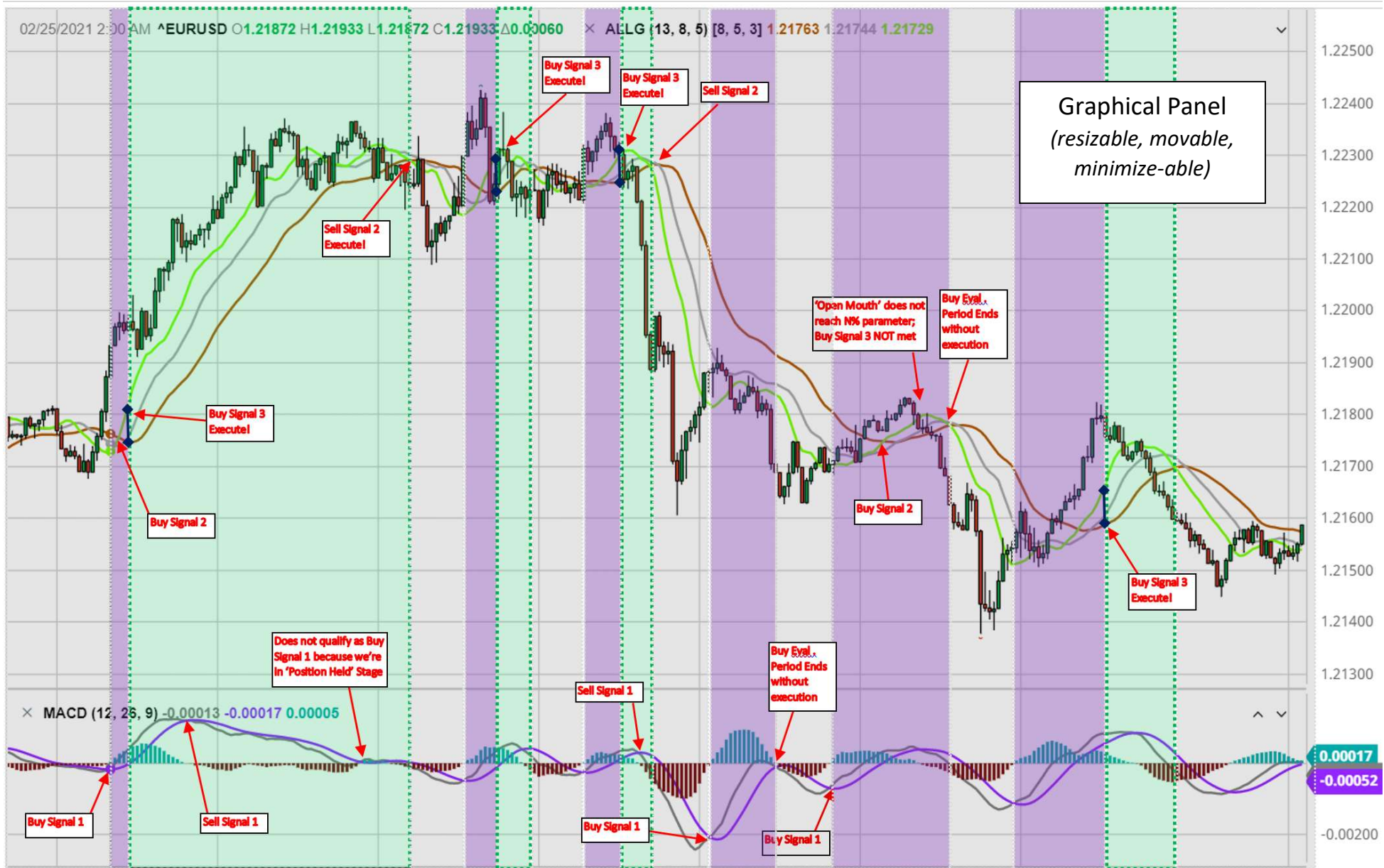
- b. **Add to EA:** Stop-loss from initial B3 buy is triggered (“Initial Buy SL in Pips” parameter used to determine execution)
 -  Insert red arrow with “SL” to denote point on candlestick chart when standard Stop-loss triggered sale
 - Notification: tone alert (timeout.wav) and pop-up message, “Stop-loss Triggered of [N Shares] at [Buy Price] at [running time in minutes and seconds from session start] for \$[total difference]” (same calculation for [total difference])
 - Only relevant when user sets “Initial Buy SL in Pips” parameter to N Pips > 0
- c. **Add to EA:** Trailing Stop-loss initiated at Sell Signal 1 (S1)
 -  Insert red arrow with “TSL” to denote point on candlestick chart when Trailing Stop-loss triggered sale
 - Trigger of Sell Signal 1 should always initiate parameter “Trailing SL in Pips.” Small number recommended (e.g., 5 Pips). Add “Trailing SL in Pips” parameter to standard Input page of EA.
 - Notification: tone alert (timeout.wav) and pop-up message, “Trailing Stop-loss Triggered of [N Shares] at [Buy Price] at [running time in minutes and seconds from session start] for \$[total difference]” (same calculation for [total difference])
- d. Sell Signal 2

Sell Signal 2: Williams Alligator ‘Lips’ (5-bar SMMA) green line *moving down* crosses the Williams Alligator ‘Jaws’ (13-bar SSMA) burnt orange line

- Execute Market sale on Sell Signal 2 (S2)
- Notification: tone alert (news.wav) and pop-up message, ~~“SELL NOW!”~~
 - **Revise for EA:** “Sale executed on Sell Signal 2 (S2).” Then cycle back to Idle Stage (gray background and notification)
- **Add to EA:** journal message with “Sell Signal 2 (S2) and Market Sale executed at [running time in minutes and seconds from session start] for profit of \$[computed total]” where [computed total] = ([N Shares Sold] * [Sale Price]) – ([Actual N Shares Bought] * [Buy Price])
-  Insert red arrow with “S2” to denote point on candlestick chart where Sell Signal 2 triggered

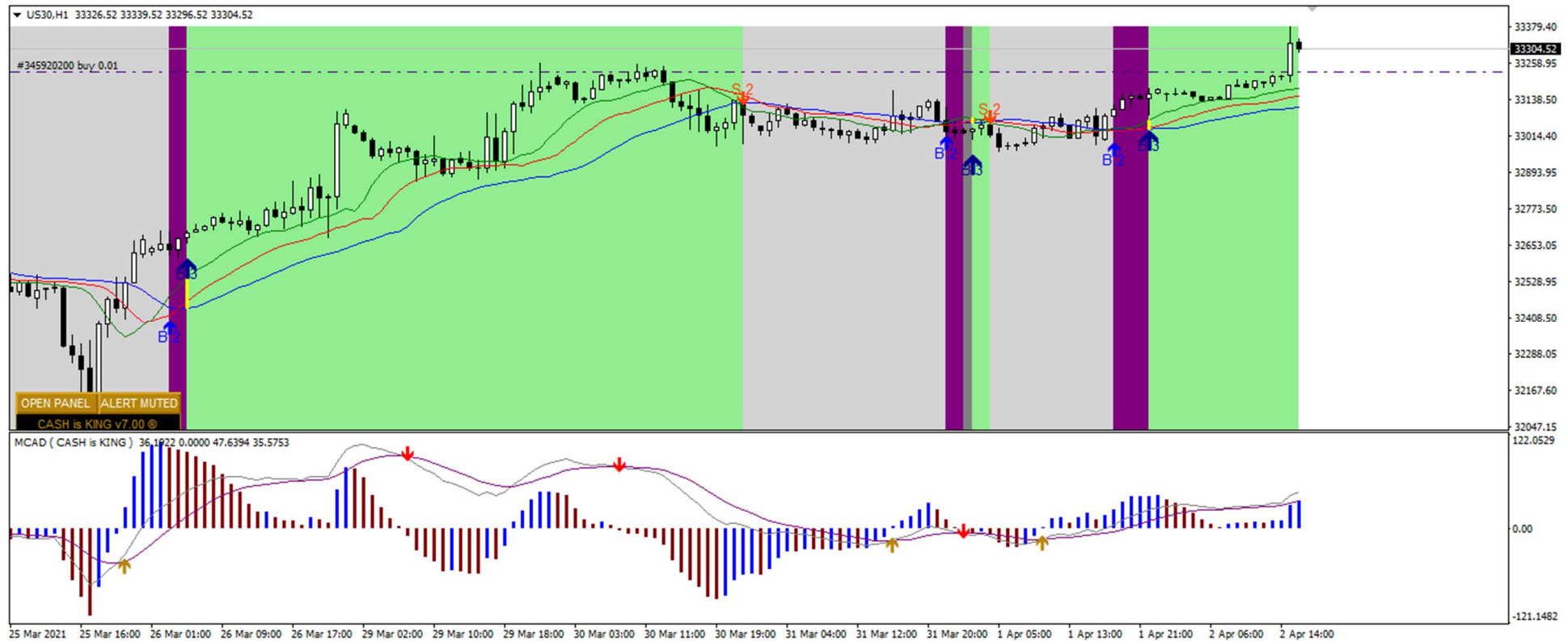
Flow loops back to Idle Stage after 5 seconds with relevant chart color and pop-up message.

Illustrative Images (first image was template for build of Cash-is-King Indicator and Template)




0.00017
-0.00052

Cash-is-King current version following build of Indicator and Template (before edits/revisions for EA build)



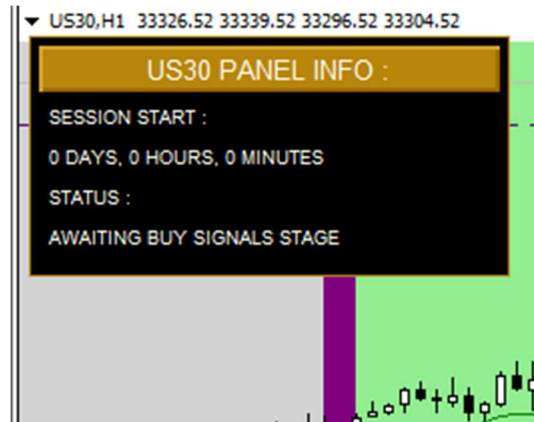
Images (above) exemplify position of MACD, Alligator and candlesticks as well as how Stage colors are displayed at relevant start and stop points. Call-out boxes in first image identify a sampling of points when B1, B2, B3, S1, S2 should happen, as well as a couple incidents when signal logic doesn't trigger due to wrong signal sequence or wrong Stage context.

Connection Error: Indicator should re-launch following loss of connection and display in pop-up message: "Connection Re-established!"

- **Add to EA:**  Insert black arrow with "**Reconnected**" to denote (approx.) point on candlestick where connection was re-established
- Write journal message with "Connection was lost! But is now found." Then commence loop-back to relevant Stage and messaging.

Template

- Current/existing Cash-is-King Template is good starting point
- Note gold-and-black graphic panel in lower left corner of existing Template (above), which has two buttons, one to open/close larger panel (see image below), and one to mute/turn-on sound alerts
- Here is an image of the current Template's graphic panel when opened:



- The current Symbol attached to the chart is first displayed in the title ("US30" in image above)
- The running Days/Hours/Minutes since active Session Start, and the Status as noted in "Notifications" in req's above

Calculations

- Use bar openings for calculations to assure good performance (can be moved to ticks if Developer recommends and can be accomplished with high-level performance)
- Likewise, notifications should only be sent at open/close of the candlestick
- All journal messages should be logged when in use on VPS (in addition to desktop MT4)

Development & QA Process

- **Complete source code will be delivered to me. All code written in English with clear and thorough annotation.**
- Developer should perform code profiling and use those to optimize Indicator performance
- Perform Indicator tests in Strategy Tester using visual testing mode and save for my review
 - One- and 3-year increments of different time periods for long-range tests (use industry-standard bar sizes such as 1-hr, 4-hr)
 - Three- and 6-month increments for mid-range tests (use industry-standard bar sizes such as 30-min and 1-hr)

- Three-day and 1-week increments for short-range tests (use industry-standard bar sizes such as 1-min and 5-min)
- I will need to be able to sample sections of results from visual testing mode to validate sequence and logic of signals are working correctly
- Using executed Buy and Sell Prices as well as journal entries for Stop-loss and Trailing Stop-loss totals using the same prices, provide performance profiles for each of the Test periods/types above (e.g., for initial deposit of \$1000, % profitable trades, % loss trades, gross profit, gross loss, net profit/loss, etc.)

Developer recommendations are welcome for

- Parameterization for toggling between Every-Tick vs. At-Bar-Opening performance of Indicator
- Settings for the B3 “MinimumN_Pips” Stop-loss and Trailing Stop-loss parameters will be critical to a profitable EA
 - Your advice for testing different levels to find optimal defaults will be helpful

Additional Build Elements

- “Cost Basis” parameter (for addition to EA’s standard Input)
 - Dollar amount user wishes to be invested *at the outset of each independent Session* (note that Cash-is-King is only cash-based, so the dollar amount entered in this parameter is literal rather than a multiple based on borrowing Margin)
 - Example: if “Cost Basis” parameter = \$1k then the Session’s first Buy execution would purchase \$1k of the relevant Symbol
 - However, after the first Sale of the Session, the EA would reinvest on the next Buy execution Cost Basis + ([Net Profit/Loss] * [“Reinvest %”] parameter) (see below)
 - Example 1: if first sale has net profit of \$50 and “Reinvest %” parameter is set to 100% then the same Session’s 2nd Buy execution would use \$1050 (i.e., Cost Basis + 100% reinvest of Net Profit/Loss)
 - Example 2: if the Session’s second sale has net loss of (\$100) then the same Session’s 3rd Buy execution would use \$950 (i.e., Cost Basis + 100% of Net Profit/Loss where the second sale dropped Net from \$1050 to \$950)
- “Reinvest %” parameter (default to 100% - see example above for how this parameter’s set value is applied). If user sets this parameter to 0% then “Cost Basis” parameter will always be used to make purchases, regardless of the Buy’s sequence within the Session
 - Any value above 0%, however, will compute Net Profit/Loss within the running Session and be added to “Cost Basis” for making reinvestment Buys
- “After Hours Trading” parameter with On/Off options – ‘force’ EA to suspend active, robotic operation after hours (Off), or allow it to continue trading (On) if/when the Symbol chosen is continuously traded in after hours (e.g., Crypto currencies). Default = “Off”.

- Since MetaTrader only connects one Account at a time – whether in a Virtual Server or Desktop application environment – an implication of the “Cost Basis” and “Reinvest %” parameters above is that a user can ‘connect’ this EA to an account that has considerably more money than the “Cost Basis” amount and allow the EA to adapt accordingly.
 - The EA should monitor all Symbols added to charts and execute Buys as the Account’s balance allows
 - For example, a user with \$10k in their account could add 10 charts, each with \$1k “Cost Basis”
 - Alternatively, they could add one chart with \$5k Cost Basis and another with \$1k Cost Basis, leaving \$4k untapped and be assured that the unused \$4k would still be there after a month of automated trading, despite the initial \$6k invested
 - I believe MetaTrader defaults to closing Sessions when the account balance reaches \$0 or there is a risk of reaching a negative balance.
- IF any Req is unclear, please request clarification. Moreover, if you have a strong recommendation because a Req as written will take too long to build or result in poor performance, please provide clarification and your recommended solution.