

ALPHA Managed Algorithms from Société Générale

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| Strategy | Implementation Shortfall | VWAP | With Volume | Open | Close | TWAP | Peg | Eclipse |
|-------------------------|--|--|--|--|--|---|--|---|
| Objective | Aims to minimise slippage between Arrival Time mid price and mid price at order completion. Alternative benchmarks available are OPEN mid price or PREVIOUS CLOSE mid price. | A generally passive trading strategy which will minimise market impact, but may not take advantage of the best pricing opportunities of the day. | Aims to participate in market volume at a level specified by the Client. The strategy has a degree of price sensitivity and will take advantage of short term price opportunities. | Participates in OPEN auction volume based on historical average opening volume. Optionally, any residual can automatically be released for trading following the auction in continuous trading using a variety of strategies. | Participates in CLOSE auction volumes. Predicts likely participation using historical average closing volume and submits orders into auction up to client's maximum participation rate. Forecast residual is traded prior to the close in continuous trading period. | Wave trading strategy that releases waves into the market over evenly divided time buckets between start and end time, with some randomisation to reduce gaming. | Iceberg strategy that aims to participate in volume at or near the order book touch by floating with the best bid offer while also sending orders to cross the spread if a more aggressive style is selected. | Aims to access dark and lit liquidity in wide range of execution venues. A stealthy algorithm that minimises signalling risk and never quotes. |
| Usage | <ul style="list-style-type: none"> Appropriate when user has a specific volume participation range but wants to execute intelligently within that range. | <ul style="list-style-type: none"> For low volume variance names when VWAP is your benchmark. Appropriate when user's aim is to minimise market impact, and when the market is moving towards the user | <ul style="list-style-type: none"> When a users wants to trade inline with market volume and aims to target a certain percentage of volume. Target % volume is not strict, but there is also a WVOLSTRICT algo which more rigorously adheres to the target | <ul style="list-style-type: none"> Appropriate to use when the benchmark is the Opening price. The user would like to minimize impact at the Open. | <ul style="list-style-type: none"> Appropriate to use when the benchmark is the Closing price. The user would like to minimize impact at the Close. | <ul style="list-style-type: none"> For liquid stocks when the user is concerned about time. | <ul style="list-style-type: none"> When you want to passively follow the market automatically. Appropriate for stocks with wide spreads. Choose the Conservative mode to follow the bid for buys and offer for sells. Choose the Neutral mode to peg to the middle of the bid/offer spread. Choose the Aggressive mode to follow the bid for sells and offer for buys. | <ul style="list-style-type: none"> When you want the order to remain hidden so as to reduce information leakage. When you want your order executed very quickly. Can be used in large, mid and small caps. |
| Special Features | <ul style="list-style-type: none"> User has a choice of Reference Price (Snap, Open, Close). | <ul style="list-style-type: none"> Ability to layer a Maximum % Volume. Participation in the Opening or Closing auction is optional. | <ul style="list-style-type: none"> Can participate in the Opening and Closing auctions (Closing auction is not valid in the U.S.). | <ul style="list-style-type: none"> Option to choose to trade any residual that is not expected to be executed during the Opening auction. User can define a percentage cap for the Opening auction. User may utilize a % Participation if choosing to trade the residual during the continuous trading session. | <ul style="list-style-type: none"> Option to choose to trade any residual not expected to be executed during the Closing auction. User can define a percentage cap for the Closing auction. User may utilize a % Participation if choosing to trade the residual during intraday session. | <ul style="list-style-type: none"> Ability to layer a Maximum % of volume. Participation in the Opening and Closing auctions where appropriate. | <ul style="list-style-type: none"> Choose the display size by filling in share amount OR express as a percentage of the total order size. | <ul style="list-style-type: none"> Splits orders in both dark and lit venues to take advantage of simultaneous execution. |
| Considerations | <ul style="list-style-type: none"> May finish earlier than your end time. Will participate in the auction using Max Vol. | <ul style="list-style-type: none"> Using a Maximum % Volume may create a greater standard deviation to the VWAP benchmark. | <ul style="list-style-type: none"> May incur price impact if percentage of volume is too high relative to the stock's liquidity. WVOL STRICT will pay the spread | <ul style="list-style-type: none"> Uses historical volume on close to predict the quantity of shares to place on the market in addition to looking at the actual volume being placed into the CLOSE auction. Therefore, if today's volume is significantly more than historical volume, the order may not fully execute. | <ul style="list-style-type: none"> May incur impact if order is a significant portion of ADV to be traded over a short time period. | <ul style="list-style-type: none"> Appropriate for short-selling in Japan, Hong Kong and Korea (follow market-specific short-sell rules). | <ul style="list-style-type: none"> No orders will be placed in any Opening or Closing Auctions. It is an expensive strategy, in that it will normally pay the spread, and at best execute at the mid in a dark pool. Care should be taken when using Eclipse in small and mid cap securities and it should be used in Conservative mode. | |

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|--|---|---|---|--|---|---|--|---|
| Sample Trade | Sell 100,000 UNH.UN with a \$23 floor, benchmark is the arrival price. | Buy 200,000 AV.LN, VWAP over the day. | Buy 80,000 MTP.FP with a 54 top, aiming to be 15% of the volume max. | Buy 10,000 AA.UN at the open. Trade the residuals but don't be more than 10% of the volume. | Sell 25,000 WYN.UN, closing benchmark. Trade the residuals, but don't be more than 10% of the volume. | Buy 100,000 GR.UN with a \$48 top, spread it out evenly from Noon until the Close. | Sell Short 25,000 4502.JT, send slices of 2000 shares each. Stay offer-side. | Buy 50,000 VOD.LN with a 125 top. Circulate through the dark pools, but if attractive liquidity appears in the visible markets, take it. |
| Duration of Order (Local market time) | Start-Time (pre-Open default = Open of the continuous trading session, no participation in the Opening auction) (post-Open default = Now) End-Time (default = Close, no participation in the Closing auction)). | Start-Time (pre-Open default = Open of the continuous trading session, no participation in the Opening auction) (post-Open default = Now) End-Time (default = Close, no participation in the Closing auction)). | Start-Time (pre-Open default = Open of the continuous trading session, no participation in the Opening auction) (post-Open default = Now) End-Time (default = Close, no participation in the Closing auction)). | Defaulted to Start-Time = Open and participation in the Opening Auction. End-Time is N/A, however, if "Residual" is set to Yes, the algo will trade the residual amount until completed or market close. | Defaulted to End-Time = Close and participation in the Closing Auction. The Start-Time is N/A, however if "Residual" is set to Yes, the algo will calculate a Start-Time for the pre-Close forecasted residual amount to trade. | Start-Time (pre-Open default = Open of the continuous trading session, no participation in the Opening auction) (post-Open default = Now) End-Time (default = Close, no participation in the Closing auction)). | Start-Time (pre-Open default = Open of the continuous trading session, no participation in the Opening auction) (post-Open default = Now). | Start time (pre-Open default = Open of the continuous trading session, no participation in the Opening auction) (post-Open default = Now). End-Time (default = Close, no participation in the Closing Auction). |
| Trading Style | Conservative, Neutral, Aggressive. | N/A | N/A | N/A | N/A | N/A | Conservative, Neutral, Aggressive. | Conservative, Neutral, Aggressive. |
| Reference Price | Snap/Open/Close. | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Target % Volume <i>Algo will aim to participate at this percentage of volume</i> | N/A | N/A | Mandatory | N/A | N/A | N/A | N/A | N/A |
| Minimum/Maximum Volume <i>Algo will not participate below the Minimum % Volume or higher than the Maximum % Volume</i> | Optional | Maximum % Volume Optional | N/A | N/A | N/A | Maximum % Volume Optional. | Maximum % Volume Optional. | Maximum % Volume Optional. |
| Open/Close Auction | Optional where appropriate. | Optional where appropriate. | Optional where appropriate. | Defaulted to Yes for the Opening. | Defaulted to Yes for the Close. | Optional where appropriate. | Opening Auction is optional. | Not an option. |
| Residual | N/A | N/A | N/A | Optional | Optional | N/A | N/A | N/A |
| Maximum Auction % Volume | N/A | N/A | N/A | Mandatory | Mandatory | N/A | N/A | N/A |
| Benchmark | N/A | N/A | N/A | VWAP, TWAP, WVOL | VWAP, TWAP, WVOL | N/A | N/A | N/A |
| % Participation for Residuals for Open and Close Strategy | N/A | N/A | N/A | Mandatory when choosing to trade during intraday trading. | Mandatory when choosing to trade during intraday trading. | N/A | N/A | N/A |
| Display Size | N/A | N/A | N/A | N/A | N/A | N/A | Mandatory unless Display % is used. | N/A |
| Display % | N/A | N/A | N/A | N/A | N/A | N/A | Mandatory unless Display Size is used. | N/A |

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