

ALPHA Managed Algorithms from Société Générale

▪ Paris: +33 1 58 98 17 00

▪ London: +44 20 7762 5012

▪ New York: +1 212 278 5100

▪ Hong Kong: +852 2166 5100

▪ Tokyo: +813 5549 5406

▪ Sydney +61 2 92108588

Group Email Address: electronic-trading@sgcib.com

Group Bloomberg Address: sgct@bloomberg.net

Strategy	Implementation Shortfall	VWAP	With Volume	Open	Close	TWAP	Peg
Objective	Minimizes the slippage between the benchmark and the actual average execution price by minimizing both opportunity cost and impact cost.	Aims to match VWAP for a specified time interval by dynamically following multiple trading indicators.	Works an order by actively using a target percentage of volume defined by the user.	Seeks to minimize the slippage of an opening benchmark by participating in both the Opening auction and volume traded after the Opening print.	Seeks to minimize the slippage of a Closing benchmark by participating in both the auction and volume traded before the Closing print.	To spread executions out evenly over a specified time period.	Floats orders at a level pegged within the bid/offer spread based on the user's instructions, with a display size being either a specific share amount or a percentage of the total order size of the order (total order size is hidden). The peg price will float with the quote; if the stock moves away, the order is cancelled and replaced to join the new offer or bid.
Usage	Appropriate when user has a specific volume participation range but wants to execute intelligently within that range.	For low volume variance names when VWAP is your benchmark.	<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. 	<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 	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.
Special Features	<ul style="list-style-type: none"> User has a choice of Reference Price (Snap, Open, Close). Participation in the Opening or Closing auction is optional (Closing auction is not valid for the U.S.). 	<ul style="list-style-type: none"> Ability to layer a Maximum % Volume. Participation in the Opening or Closing auction is optional. 	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. 	Choose the display size by filling in share amount OR express as a percentage of the total order size.
Considerations	May finish earlier than your end time.	Using a Maximum % Volume may create a greater standard deviation to the VWAP benchmark.	May incur price impact if percentage of volume is too high relative to the stock's liquidity.			May incur impact if order is a significant portion of ADV to be traded over a short time period.	Appropriate for short-selling in Japan, Hong Kong and Korea (follow market-specific short-sell rules)
Sample Trade	Sell 100,000 UNH.UN with a \$23 floor, benchmark is the arrival price.	Buy 200,000 AVLN, VWAP over the day.	Buy 80,000 MTP.FP with a 54 top, try to be 15% of the volume.	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. If you don't think you can execute all at the Close, start earlier, 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 bid-side

Parameters	Implementation Shortfall	VWAP	With Volume	Open	Close	TWAP	Peg
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)
Trading Style	Conservative, Neutral, Aggressive	N/A	N/A	N/A	N/A	N/A	Conservative, Neutral, Aggressive
Reference Price	Snap/Open/Close	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
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
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.
Residual	N/A	N/A	N/A	Optional	Optional	N/A	N/A
Maximum Auction % Volume	N/A	N/A	N/A	Mandatory	Mandatory	N/A	N/A
Benchmark	N/A	N/A	N/A	VWAP, TWAP, WVOL	VWAP, TWAP, WVOL	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
Display Size	N/A	N/A	N/A	N/A	N/A	N/A	Mandatory unless Display % is used.
Display %	N/A	N/A	N/A	N/A	N/A	N/A	Mandatory unless Display Size is used.

This document was prepared by SG Americas Securities, LLC ("SGAS") to generally describe certain broker-dealer execution services SGAS and its affiliates would be willing to provide on an arm's length basis. SGAS believes the information in this document is reliable but makes no representation or warranty as to whether the information is current, accurate or complete. SGAS is under no obligation to update, modify or amend this communication or to otherwise notify you that any matter contained herein changes or subsequently becomes inaccurate. SGAS and its affiliates expressly disclaim all responsibility for any use of or reliance upon this document. This document is provided solely for informational purposes only and may not be construed as an offer to buy or sell, or a solicitation of an offer to buy or sell any security or financial instrument or to engage in any particular trading strategy or as an official confirmation of terms. Investors must make their own investment decisions using their own independent advisors while considering their own financial situation and investment objectives. SGAS and its affiliates do not act as a financial adviser or as a fiduciary in respect of any transaction unless such entity expressly agrees so in writing. This document may not be relied upon as investment or tax advice or an investment recommendation. The investments and strategies discussed in this document are not suitable for all investors. Automated trading services contain complex financial tools which automatically process and submit orders for execution based upon parameters you designate, and they will independently and continuously process your orders until the parameters you establish have been fully satisfied. These services are intended for use only by sophisticated investors with adequate resources to enable a thorough understanding of how the services operate and to assume the financial risks presented. We assume no responsibility or liability for executions resulting from your use of these services. This document may not be reproduced, distributed or published by any person for any person without SGAS's prior written consent. © 2008 Société Générale, SG Americas Securities, LLC and their affiliates. SG CIB is the Corporate and Investment Banking arm of SG. Certain services described herein are provided by SGAS, a US registered broker-dealer, member of the NYSE, FINRA and SIPC, and a wholly owned subsidiary of SG. Services provided outside the US may be provided by affiliates of SGAS.