

# THE POWER TO trade smarter

Equities  
Electronic Trading Guide  
Asia Pacific

Version 8.0

# Contents

---

APAC Algorithmic Trading Capabilities	3
BofA TagAlgo™   Relative Trading I/S	6
INSTINCT®   Signal Driven I/S	7
PIAlgo®   Spread Capture	8
VWAP   Volume Weighted Average Price	9
TWAP   Time Weighted Average Price	10
POV   Percentage of Volume	11
Dynamic   Two Way Switching Algo	12
IS   Implementation Shortfall	13
QMOC   Quantitative Market on Close	14
SMA   Smart Market Access	15
GetDone   Liquidity Seeking	16
Blockseeker   Dark only Strategy	17
MosaicAlgo®   Machine Learning	18

---

# APAC Algorithmic Trading Capabilities

## Liquidity-seeking strategies

### BofA TagAlgo™

BofA TagAlgo™ is a signal-driven liquidity seeking strategy. It dynamically adjusts trading tactics using a combination of signals, including stock's relative return against benchmark index or its return itself. The algorithm is calibrated with 3 urgency modes, allowing traders to express their own views on alpha and/or urgency whilst having an understanding of the expected participation rates.

Urgency	Min%*	Max%*	Open Auction	Close Auction	Aim to Complete
Low (L)	5%	10%	Yes	Yes	Optional
Med (M)	10%	20%	Yes	Yes	Optional
High (H)	20%	30%	Yes	Yes	Optional

\* BofA TagAlgo™ will choose the above defaults unless overridden on the ticket or through a customization

### INSTINCT®

INSTINCT® combines stock specific characteristics and Urgency to determine the ideal average participation rate. The algorithm continuously monitors real-time order book dynamics using the instinct signaling framework to minimize market impact. With 5 urgency levels at your disposal, take full control of your execution with a simple parameter change.

Urgency	Min%**	Max%**	Open Auction	Close Auction	Aim to Complete
1	5%	10%	Yes	Yes	Optional
2	10%	20%	Yes	Yes	Optional
3	20%	30%	Yes	Yes	Optional
4	30%	35%	Yes	Yes	Optional

\*\* INSTINCT® will choose the above defaults unless overridden on the ticket or through a customization

### Other Liquidity-seeking strategies

Algo	Urgency	Description	Open Auction	Close Auction
INSTINCT®	5	Intelligently take volume within your limit price	Yes	Yes
GETDONE (Urgent strategy, hits/lifts quotes, refreshes)	Low (L)	High sensitivity to impact.	Yes	Yes
	Med (M)	Medium sensitivity to impact.	Yes	Yes
	High (H)	Low sensitivity to impact.	Yes	Yes

# APAC Algorithmic Trading Capabilities (contd.)

## Spread Capture

### PiAlgo®

PiAlgo® is a passive spread capture algorithm that will cross the spread only when the price is likely to move away. Use Urgency to set your willingness to cross the spread and talk to your Electronic Trading representative for customization options.

## Participative/Schedule-based strategies

Participative/Schedule-based algos are intended to execute an order against industry standard benchmarks such as VWAP, interval volume and the closing auction.

Algo	Urgency	Description	Target Participation***	Open Auction	Close Auction
VWAP		Volume Weighted Average Price.		Yes	Yes
POV		Percentage of Volume.		Yes	Yes
Dynamic POV		Uses a dynamic reference price as the trigger for when to Speed Up.		Yes	Yes
TWAP		Time Weighted Average Price.		Yes	Yes
QMOC	L	QMOC is designed to minimize slip-page to the close price benchmark as well as the probability of leaving residual shares.	20%	No	Yes
	M	The strategy uses stock and order specific characteristics including a real-time volume signal to optimize the trade schedule to your target close participation rate with those objectives in mind.	25%	No	Yes
	H		30%	No	Yes
	MOC Only	Submits order when the auction starts; the mode can be used any time during the trading session.		No	Yes

\*\*\* Target % of closing auction

# APAC Algorithmic Trading Capabilities (contd.)

## Advanced strategies

### MosaicAlgo®

MosaicAlgo® is a machine learning algorithm that utilizes order and stock characteristics together with Transaction Cost Analysis (TCA) data to determine the optimal strategy for execution.

Urgency	Min%	Max%	Open Auction	Close Auction	Aim to Complete
Low (L)	5%	10%	Yes	Yes	Optional
Med (M)	10%	20%	Yes	Yes	Optional
High (H)	20%	30%	Yes	Yes	Optional

## Other strategies

Algo	Description	Open Auction	Close Auction	Aim to Complete
SMA	Direct Smart Router Access.	Yes	Yes	Yes
BlockSeeker	Dark router, accesses internal and external Liquidity	No	No	No

# BofA TagAlgo™ | Relative Trading I/S

## What it does

BofA TagAlgo™ is a signal-driven liquidity seeking strategy. It dynamically adjusts trading tactics using a combination of signals, including stock's relative return against benchmark index or its return itself. The algorithm is calibrated with 3 urgency modes, allowing traders to express their own views on alpha and/or urgency whilst having an understanding of the expected participation rates.

## Customization Options

Access to a number of customizations including, but not limited to:

- Urgency bands to setup participation rates different from the algo default
- Must complete
- Dark overlay settings
- Market specific, order specific customizations
- Algo switches

## Good for

- Orders where you are benchmarked to implementation shortfall with a target participation rate
- Dynamic scaling according to stock or index relative performance
- Liquidity seeking

## Watch out for

- Does not guarantee completion – use 'Aim to Complete' where required

## The Key Dynamics

### Trader Urgency

Trader chooses Urgency level, which drives min/max participation in lit venues.

### Parameters

Start/End Time	: Order Start/End Time (Default: Time of submission, market open/close)
Min/Max % Volume	: Controls the Min and Max participation rate
Scaling	: Reversion/Neutral/Momentum (Default: Reversion)
Benchmark	: Participate based on relative performance (Default: Index)
Stock Reference Price	: Explicit stock price for Stock Benchmark
Urgency*	: Low (5-10%), Medium (10-20%), High (20-30%) (Default: Medium)
Aim To Complete	: Maximizes participation to aim for completion (Default: Not enabled)
Auction Participation	: Selects auctions to participate in (Default: All)
GetDone Price	: Price where the order will look to complete (Default: Not enabled)
GetDone %	: Percent of the order to complete at GetDone Price (Default: 100%)

\* BofA TagAlgo™ will choose the above defaults unless overridden on the ticket or through a customization

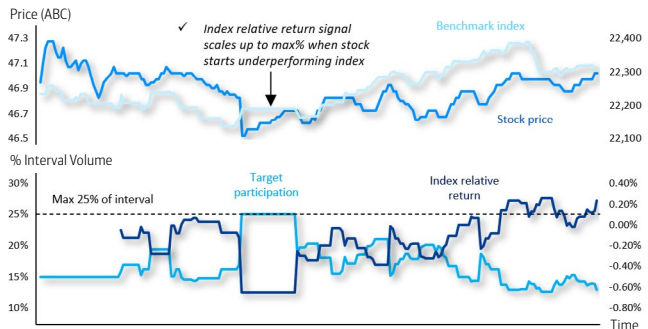
### Optimizing Target & Tolerance

Dynamically adjusts its target participation & tolerance, based on signals, including:

1. Current Price deviation from short-term and long-term price
2. Stock's relative return against benchmark index or its return itself
3. Stock's relative return against open and arrival price.

### Example

"Buy 100,000 shares of ABC, BofA TagAlgo™, maximum 25% of volume"



# INSTINCT® | Signal Driven I/S

## What it does

INSTINCT® combines stock specific characteristics and urgency to determine the ideal average participation rate. The algorithm continuously monitors real-time order book dynamics using the instinct signaling framework to minimize market impact. With 5 urgency levels at your disposal, take full control of your execution with a simple parameter change.

## Customization Options

Access to a number of INSTINCT® customizations including, but not limited to:

- Urgency bands to setup participation rates different from the algo default
- Must complete
- Dark overlay settings
- Market specific, order specific customizations
- Algo switches

## Good for

- The go-to algorithm for smart participation and flexibility

## Watch out for

- Urgency 5 will be aggressive, use limits

## The Key Dynamics

Trader chooses Urgency 1-4, which drives min/max participation in lit venues. INSTINCT-5, when selected, is the same as the GetDone strategy.

### Parameters

Start/End Time	: Order Start/End Time (Default: Time of submission, market open/close)
Max % Volume	: Controls the maximum participation rate
Urgency	: 1=5-10%, 2=10-20%, 3=20-30%, 4=30-35%, 5=GetDone (Default: 3)
Aim To Complete	: Maximizes participation to aim for completion (Default: Not enabled)
Auction Participation	: Selects auctions to participate in (Default: All)
GetDone Price	: Price where the order will look to complete (Default: Not enabled)
GetDone %	: Percent of the order to complete at GetDone Price (Default: 100%)

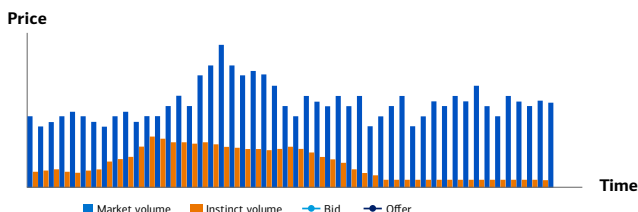
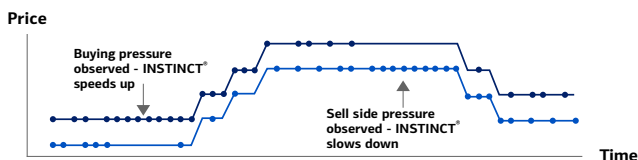
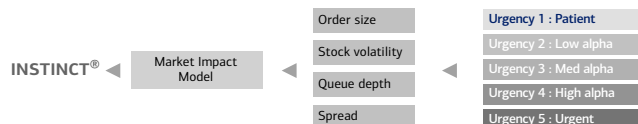
### Example

"Buy 1,000,000 shares of ABC, INSTINCT® 3, with a 110 limit"

### Trading speed optimization

On order arrival, Instinct optimizes its target participation & speed band through the following steps:

1. Estimate optimal trading speed by solving proprietary market impact model with target market impact
2. Find speed band based on urgency, order size and min/max% volume cap using pre-defined formula
3. Finalize target participation rate to ensure the optimal trading speed falls into the speed band found



# PiAlgo® | Spread Capture

## What it does

PiAlgo® is a passive spread capture algorithm that will cross the spread only when the price is likely to move away.

## Customization Options

Access to a number of PiAlgo® customizations including, but not limited to:

- Must Complete

## Good for

- Orders where you are benchmarked to implementation shortfall without a strict participation target or short-term alpha expectation

## Watch out for

- Orders with short-term alpha
- Does not guarantee completion (Aim-To-Complete is easily configured)
- Orders with a GetDone may exceed your Max%
- Adherence to Min% is not guaranteed

## The Key Dynamics

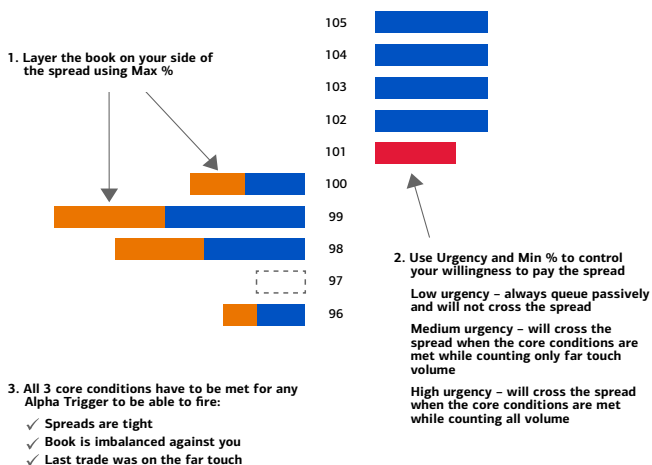
Use Urgency to set your willingness to cross the spread and talk to your Electronic Trading representative for customization options.

### Parameters

Start/End Time	: Order Start/End Time (Default: Time of submission, market open/close)
Min % Volume	: Controls your minimum target % of traded volume (Default: 10%)
Max % Volume	: Controls your target % of near touch book size and Max % for the order (Default: 20%)
Urgency	: Sets the strategy's willingness to pay the spread (Default: Medium)
Aim To Complete	: Maximizes participation to aim for completion (Default: Not enabled)
Auction Participation	: Selects auctions to participate in (Default: All)
GetDone Price	: Price where the order will look to complete (Default: Not enabled)
GetDone %	: Percent of the order to complete at GetDone Price (Default: 100%)

### Example

"Buy 100,000 shares of ABC using a benchmark of Arrival."





# VWAP | Volume Weighted Average Price

## What it does

VWAP executes an order over a specified time interval using forecasted volume to try and outperform the Interval Volume Weighted Average Price.

## Event days handling

Volume curves are adjusted by default on multiple event days, including on month ends. All adjustments are stock specific. Speak to your coverage to discuss options for turning off auto adjustments to curves.

## Customization Options

Access to a number of VWAP customizations including, but not limited to:

- Tilting of the curve (*frontload or backload*)
- Maximize spread capture
- Early completion
- Market specific, order specific customizations
- Algo switches to VWAP

## Good for

- Where order completion is a priority but minimizing impact is more important than strict adherence to a VWAP profile
- Orders where you have a directional view (that prices will move in your favor) i.e. prices moving lower/higher for buys/sells

## Watch out for

- Orders with GetDone Price may exceed your Max % Volume
- When trading for a name currently in delayed open, MOO volume will additionally include expected volume between order start time and market open time

## The Key Dynamics

### VWAP Curve Construction

The strategy creates a target schedule based on order size, stock specific volume curve, and other stock specific characteristics relevant in Asia (e.g. queue time). Throughout the day, dynamic adjustments are applied to the target based on observed real-time volume changes.

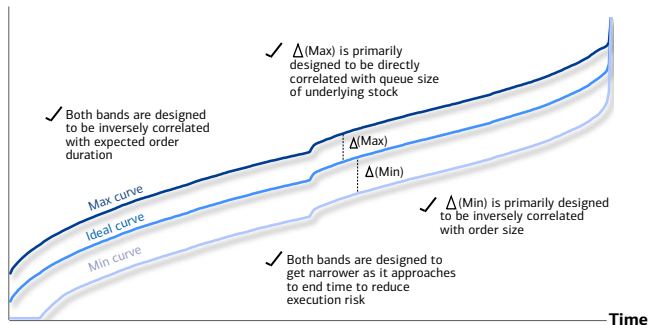
### Parameters

Start/End Time	: Order Start/End Time (Default: Time of submission, market open/close)
Max % Volume	: Controls the maximum participation rate
Urgency	: Low; Medium; High (Default: Medium)
Auction Participation	: Selects auctions to participate in (Default: All)
Speed Up Price	: Price level to trigger Speed Up (Default: Not enabled)
Speed Up Target %	: Target % of volume when Speed Up is triggered
GetDone Price	: Price where the order will look to complete (Default: Not enabled)
GetDone %	: Percent of the order to complete at GetDone Price (Default: 100%)

### Example

"Buy 100,000 shares of ABC, VWAP over the day. Do not exceed 20% of volume."

#### % Complete



### Opportunistic Signals

The strategy utilizes real-time order-book driven signals to identify spread crossing opportunities in order to reduce opportunity cost while maximizing passive fill rates, combined with the ability to schedule execution over a specified time period.

### Child order optimization

BofA's VWAP strategy dynamically sizes child orders based on projected volume and stock specific intra-day volatility, allowing the algo to dynamically adjust an order's trade schedule.

Posting logic and order placement model utilizes real-time monitoring of queue length, cancellation rates (e.g. China), and order constraints (e.g. Max% of volume) before new slices are created.

# TWAP | Time Weighted Average Price

## What it does

TWAP schedules execution of an order evenly over a specified time period.

## Customization Options

Access to a number of TWAP customizations including, but not limited to:

- Maximize spread capture
- Early completion
- Market specific, order specific customizations

## Good for

- Keeping dollar neutral on buy versus sell baskets
- Names with unstable volume profiles

## Watch out for

- TWAP will pay the spread more than VWAP in long queue names
- Use price and volume limits to avoid pushing prices
- Orders with GetDone Price may exceed your Max % Volume
- When trading for a name currently in delayed open, MOO volume will additionally include expected volume between order start time and market open time

## The Key Dynamics

The Auction Participation parameter allows you to opt in or out of open and close periods on the fly. Use GetDone features to complete an order at a specified price.

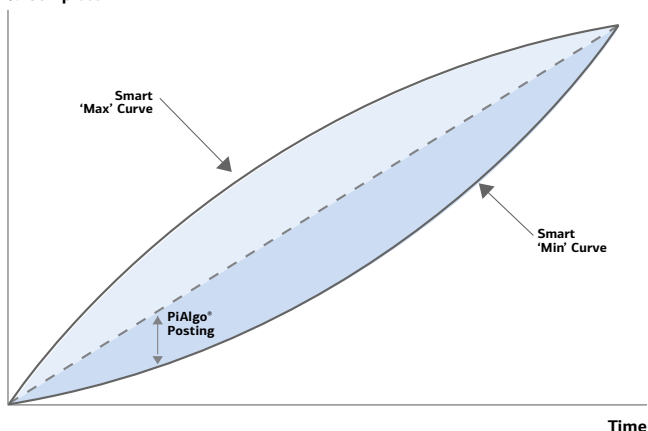
## Parameters

Start/End Time	: Order Start/End Time (Default: Time of submission, market open/close)
Max % Volume	: Controls the maximum participation rate
Auction Participation	: Selects auctions to participate in (Default: All)
GetDone Price	: Price where the order will look to complete (Default: Not enabled)
GetDone %	: Percent of the order to complete at GetDone Price (Default: 100%)

## Example

"Buy 100,000 shares of ABC, TWAP over the day. Do not exceed 20% of volume."

### % Complete



# POV | Percentage of Volume

## What it does

POV targets a user-specified percentage of market volume.

## Good for

- Keeping pace with market volume
- Utilizing the Speed Up function to take advantage of favorable prices

## Watch out for

- Completion is not guaranteed
- Orders with a GetDone Price may exceed your Target % Volume

## The Key Dynamics

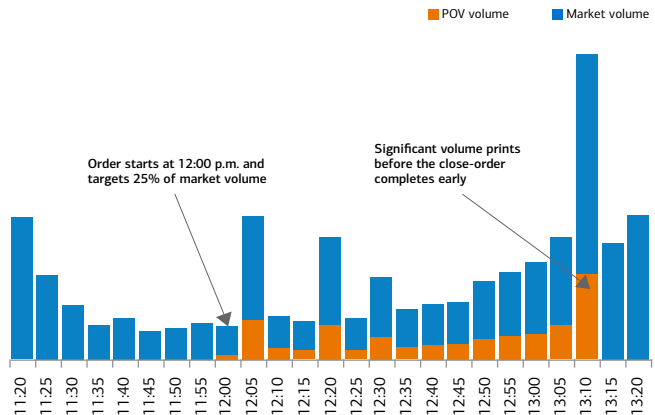
Fair value and Gradual Catch Up logic protects you against unexpected price or volume spikes. Take advantage of price moves in your favor by setting a Speed Up Price and target participation.

### Parameters

Start/End Time	: Order Start/End Time (Default: Time of submission, market open/close)
Target % Volume	: Sets the target participation rate
Auction Participation	: Selects auctions to participate in (Default: All)
Speed Up Price	: Price level to trigger Speed Up (Default: Not enabled)
Speed Up Target %	: Target % of volume when Speed Up is triggered
GetDone Price	: Price where the order will look to complete (Default: Not enabled)
GetDone %	: Percent of the order to complete at GetDone Price (Default: 100%)

### Example

\*Buy 1 million shares of ABC, be 25% of market volume from 12 p.m.\*



# Dynamic | Two-way Switching Algo

## What it does

Switch between Strategy A and Strategy B when a dynamic reference price is triggered.

## Good for

- Dynamically switching participation based on real time price movement

## Watch out for

- Completion is not guaranteed
- Orders with a GetDone Price may exceed your Target % volume.

## The Key Dynamics

Strategy A is a choice of either VWAP or one of IS/Inline strategy. Strategy B is a choice triggered when specified 'Price Condition' is true. The switch will only take place once the underlying price trigger has been met for a pre-configured period of time. Strategy will allow switching back when condition is untrue for the said period of time.

## Parameters

Start/End Time	: Order Start/End Time (Default: Time of submission, market open/close)
Base Strategy (Leg-1)	: Strategy A, the base strategy – POV/VWAP/TagAlgo/PiAlgo/TWAP
Trigger Strategy (Leg-2)	: Strategy B, the switch-to strategy – POV/VWAP/TagAlgo/PiAlgo/TWAP
Ref Price Offset	: Offset in bps, (+) value is aggressive, (-) value is passive vs. Ref Price
Ref Price	: Dynamic reference price to trigger the strategy switch
Leg-1 Target %	: Target% for Strategy A
Leg-2 Target %	: Target% for Strategy B
Speed Up To Order	: Switch (or remain) as Strategy A when executed shares > up to % of order quantity
GetDone Price	: Price where the order will look to complete (Default: Not enabled)
GetDone %	: Percentage of the order to complete at GetDone Price (Default: 100%)

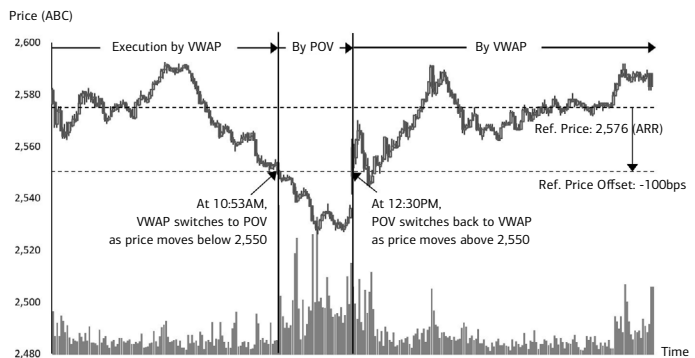
## Reference Price Examples

AVG	: Average Price
VSOT	: VWAP since the order is trading
VWAP	: All day VWAP for the particular security
PCL	: Previous closing price
OPN	: Opening price
ARR	: Arrival mid price

## Example

"Buy 100,000 shares of ABC, BofA Dynamic, switching from VWAP to POV using Ref Price=ARR, Ref Price Offset=-100bps."

✓ Dynamic switch from VWAP to POV on price trigger helps capture liquidity in line with market at favorable price



# IS | Implementation Shortfall

## What it does

IS aims to minimize market impact versus arrival by dynamically adjusting target participation

## Good for

- Targeting an arrival price benchmark based on your preferred trading style
- When you have a view on price movement

## Watch out for

- Completion is not guaranteed
- Orders with a GetDone Price may exceed your Max% Volume

## The Key Dynamics

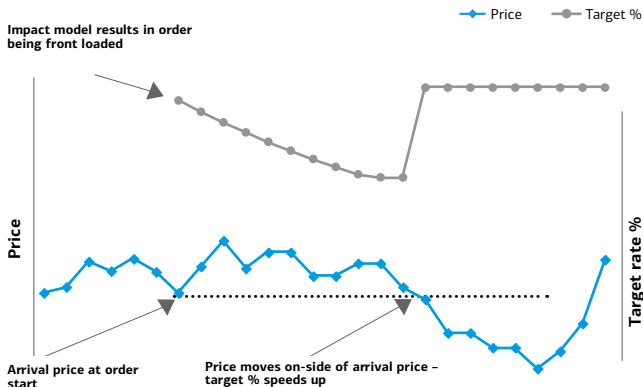
Target participation is adjusted using both a user specified trading style (Reversion/Momentum/Neutral) and a proprietary market impact model.

### Parameters

Start/End Time	: Order Start/End Time (Default: Time of submission, market open/close)
Min/Max% Volume	: Controls the min/max participation rate
Scaling	: Reversion/Neutral/Momentum (Default: Neutral)
Urgency	: Low Risk (target 10%) / Medium Risk (target 20%) / High Risk (target 30%) (Default: Medium)
Auction Participation	: Selects auctions to participate in (Default: All)
GetDone Price	: Price where the order will look to complete (Default: Not enabled)
GetDone %	: Percent of the order to complete at GetDone Price (Default: 100%)

### Example

"Buy 250,000 shares of ABC, IS with Reversion scaling."



# QMOC | Quantitative Market on Close

## What it does

QMOC targets the closing price by scheduling trading based on order size, stock volatility and trader urgency.

## Event days handling

Volume curves are adjusted by default on multiple event days, including on month ends. All adjustments are stock specific. Speak to your coverage to discuss options for turning off auto adjustments to curves.

## Good for

- Targeting closing price without having unnecessary impact

## Watch out for

- Without MOC Only selected, QMOC can start early
- Stocks with unstable closing volumes

## The Key Dynamics

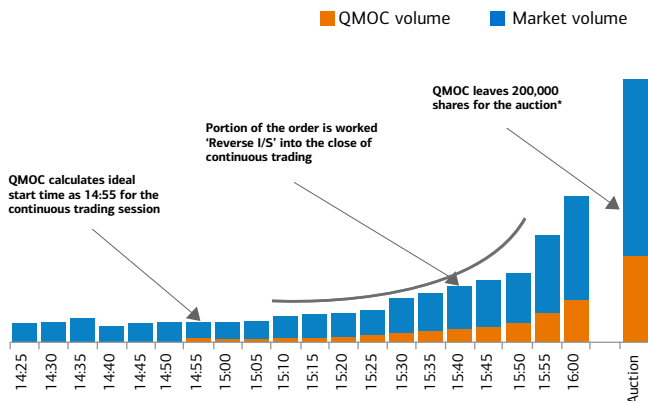
Select an urgency of High or Low to start later or to start earlier in the trading day. You can limit your participation to the closing auction period only by selecting MOC only.

### Parameters

Start/End Time	: Order Start Time (Default: QMOC calculated Start Time)
Urgency	: Low (Start Early)/Medium/High (Start Later) (Default: Medium)
Max% Volume	: Controls the max participation rate
Auction Limit vs Last (bps)	: Re-strike limit price with reference to last trade price in continuous (Default: Off)
Auction Participation	: MOC Only (Default: Off)

### Example

"Buy 500,000 shares of ABC, market on close. Happy to start early to reduce market impact."



# SMA | Smart Market Access

## What it does

SMA is a Direct Market Access (DMA) strategy that adheres to the market microstructure and exchange rules across Asia Pacific.

## Good for

- Direct access to the order book
- Earning the spread (Peg)
- Limiting market impact by hiding your true order size (Iceberg)

## Watch out for

- Use limit prices to avoid market impact
- Completion is not guaranteed
- Stock price momentum against you when using Peg

## The Key Dynamics

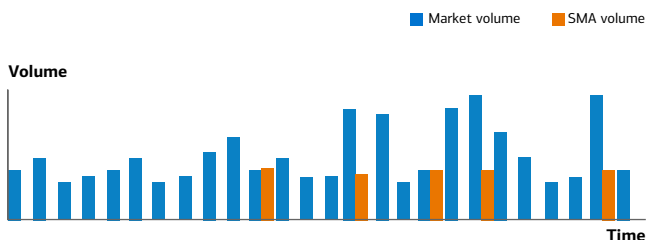
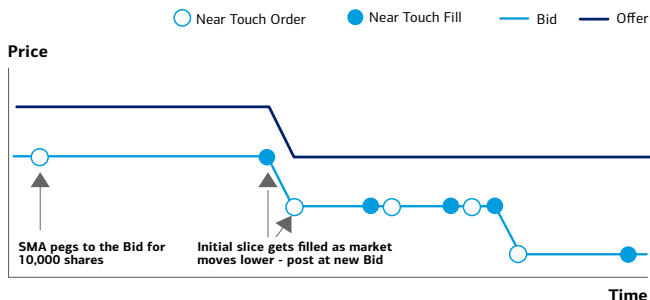
SMA offers Iceberg and Peg functionality. Set a display size to only show a portion of your order at one time. Select a Peg To price and optional Peg Offset to follow a prevailing market price.

### Parameters

Start/End Time	: Order Start/End Time (Default: Time of submission, market open/close)
Display	: Quantity of shares to display at the Peg or Limit (Default: SMA calculated)
Peg To	: Price point to Peg to Mid/Bid/Offer/Near/Far Touch (Default: Off)
Peg Offset	: Price (in ticks) to adjust your selected Peg To (Default: 0)
Auction Participation	: Selects auctions to participate in (Default: All)

### Example

"Buy 50,000 shares of ABC, peg to the bid and only show 10,000 shares at a time."



# GetDone | Liquidity Seeking

## What it does

GetDone is a liquidity seeking strategy that looks to intelligently take volume within your limit price.

## Good for

- Semi-automatic trading or level trading for better performance
- Liquidity taking with control

## Watch out for

- Unintended impact – use tight limits
- Does not guarantee completion

## The Key Dynamics

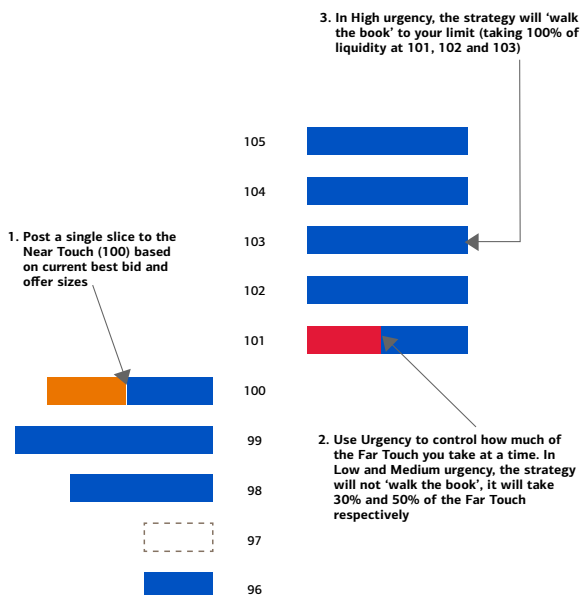
By using the Urgency parameter, you have the ability to alter how much of the far touch you take at a time, providing liquidity seeking with increased control.

### Parameters

Start/End Time	: Order Start/End Time (Default: Time of submission, market open/close)
Max% Volume	: Controls the maximum participation rate
Urgency	: Increases far touch liquidity taking percentage. Low (30%), Medium (50%), High (100%) (Default: Medium)
Allow Post	: Allow posting (Default: Yes)
Auction Participation	: Selects auctions to participate in (Default: All)

### Example

"Buy 100,000 shares of ABC actively up to a limit of 103, happy to post."





# Blockseeker | *Dark Only Strategy*

## What it does

Blockseeker is a dark only strategy that can access both Instinct X® (Japan only) and external exchange dark liquidity venues (Australia only).

## Customization Options

- Counterparty selection in the Instinct X® dark pool
- Venue selection in Japan

## Good for

- Minimising information leakage and market impact
- Searching for block liquidity by using an MEQ

## Watch out for

- No guarantee of completion

## The Key Dynamics

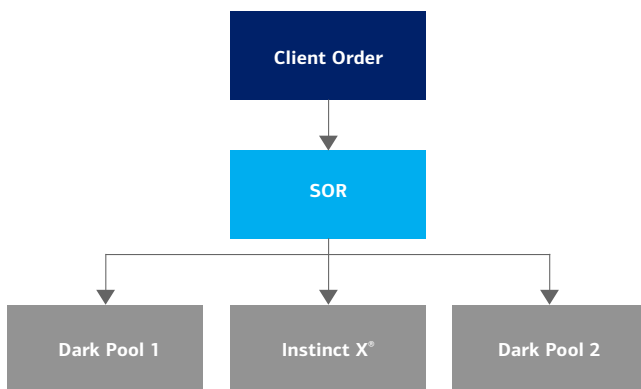
Set a Cross Price to peg the order to Mid/Near/Far Touch and a 'Min Cross Quantity' to avoid fills below a specified size Minimum Execution Quantity (MEQ).

## Parameters

Start/End Time : Order Start/End Time (Default: Time of submission, market open/close)  
Min Cross Quantity : Minimum fill size in number of shares (Default: 1)  
Cross Limit Price : Peg to Mid/Bid/Offer/Near/Far Touch (Default: Mid)

## Example

"Buy 1 million shares of ABC, dark only and peg to the Mid Price. Use an MEQ of 100,000 shares."



# MosaicAlgo® | Machine Learning

## What it does

MosaicAlgo® is a machine learning algorithm that determine the optimal strategy for execution.

## Good for

- Optimizing execution performance when not bound by a specific strategy

## Watch out for

- Trade constraints will narrow down the pool of available algorithms

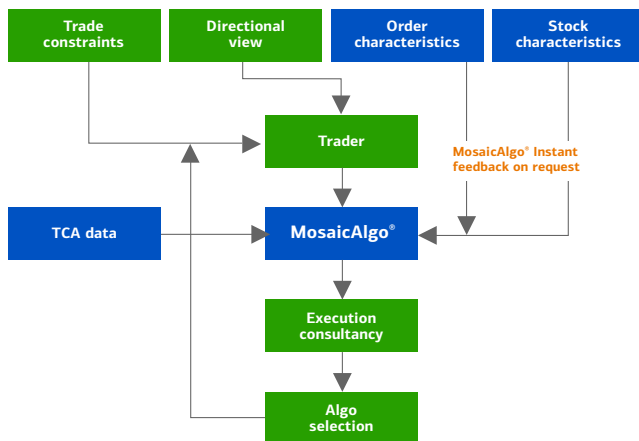
## The Key Dynamics

MosaicAlgo® utilizes order and stock characteristics together with Transaction Cost Analysis (TCA) data to determine the optimal strategy for execution.

### Parameters

Start/End Time	: Order Start/End Time (Default: Time of submission, market open/close)
Min/Max% Volume	: Controls the min/max participation rate
Over The Day	: Only VWAP or TWAP strategies will be used when selected (Default: Not enabled)
Urgency	: Low; Medium; High (Default: Medium)
Auction Participation	: Selects auctions to participate in (Default: All)
Aim To Complete	: Maximizes participation to aim for completion (Default: Not enabled)
GetDone Price	: Price where the order will look to complete (Default: Not enabled)
GetDone %	: Percent of the order to complete at GetDone Price (Default: 100%)

### Execution Value Chain



Hong Kong +852.3508.7550

Mumbai +91.22.6632.8718

Tokyo +81.3.6225.8398

Email [dg.apes\\_et@bofa.com](mailto:dg.apes_et@bofa.com)

Bloomberg MSG MLAPDSA<GO>

## Comprehensive GES Disclaimer

### BofA Securities Instinct X®

BofA Securities, Inc. ("BofA Securities") operates Instinct X®, an NMS Stock Alternative Trading System ("NMS Stock ATS") in the US, and in other geographies. BofA Securities seeks to operate Instinct X in accordance with applicable regulations, and in accordance with reasonable expectations of fairness. However, potential execution counterparties in Instinct X may have trading objectives and/or expectations that may be adverse to your own, and so execution outcomes may vary. BofA Securities makes no guarantee as to the performance that can be achieved through the use of Instinct X.

Within Instinct X, BofA Securities may offer a variety of crossing services that support various order types/attributes and counterparty selection criteria to enhance Client choice regarding the nature of potential counterparties with whom they may execute. Where it does so, BofA Securities will use reasonable efforts to adhere to your expressed preferences regarding the use of different crossing services, to assign Clients to the appropriate segment and to maintain those assignments, and to adhere to your expressed preferences regarding interaction with participants in such segments. While BofA Securities will use reasonable efforts in this context, it makes no guarantee as to accuracy or consistency of the composition of any segmentation assignment, which may be based in part on BofA Securities' understanding of information supplied by others.

### BofA Securities Routing and Order Handling

In the absence of instructions to the contrary, or depending upon your expressed preferences, the particular BofA Securities routing strategy or algorithm that you may elect to employ, or that is employed on your behalf, and as part of BofA Securities' services seeking the most efficient and effective experience for Client orders, your orders may be given an opportunity to interact with any non-displayed orders and conditional placements in BofA Securities' own NMS Stock ATS, which may include BofA Securities principal trading interest, prior to being exposed to external venues. External venues may include but not be limited to public exchange markets, multi-lateral trading facilities, other ATSs, or broker dealers, (such routing appropriate to each BofA Securities region) consistent with your instructions or BofA Securities' routing logic as applicable. While BofA Securities maintains relationships and connectivity to a variety of such venues as part of its routing processes, BofA Securities does not represent that it has access to all such venues that potentially may be available at any given point in time. To the extent that this document references performance times, such information is indicative and attempts to illustrate the performance speed and latency generally associated with certain systems, order/message paths, and linkages. Actual performance may be different and, in some cases, materially slower than indicated.

### Additional Disclaimers and Information

This document is provided to you solely for informational purposes by BofA Securities and is designed to serve as a general summary of the trading services and products that BofA Securities may offer from time-to-time. This document is not research and it was not prepared or reviewed by employees within the BofA Global Research department. This document is not intended to constitute advertising or advice of any kind, and it should not be viewed as an offer or a solicitation to buy or sell securities or any other financial instrument or product. BofA Securities makes no representation, warranty or guarantee, express or implied, concerning this document and its contents, including whether the information (which may include information and statistics obtained from third party sources) is accurate, complete or current. The information in this document is provided "as is," is subject to change at any time, and BofA Securities has no duty to provide you with notice of such changes.

BofA Securities will not be responsible or liable for any losses, whether direct, indirect or consequential, including loss of profits, damages, costs, claims or expenses, relating to or arising from your reliance upon any part of this document. Before determining to use any service or product offered by BofA Securities, you should consult with your independent advisors to review and consider any associated risks and consequences. This document has been prepared without regard to the specific investment objectives, financial situation and needs of any particular recipient. BofA Securities does not render any opinion regarding legal, accounting, regulatory or tax matters.

This document is confidential, for your private use only, and may not be shared with others. This document, including all trademarks and service marks relating to BofA Securities, remains the intellectual property of BofA Securities. For other important legal terms governing the use of this document please see: Global Markets Disclaimers

"Bank of America" and "BofA Securities" are the marketing names used by the Global Banking and Global Markets divisions of Bank of America Corporation. Lending, derivatives, other commercial banking activities, and trading in certain financial instruments are performed globally by banking affiliates of Bank of America Corporation, including Bank of America, N.A., Member FDIC. Trading in securities and financial instruments, and strategic advisory, and other investment banking activities, are performed globally by investment banking affiliates of Bank of America Corporation ("Investment Banking Affiliates"), including, in the United States, BofA Securities, Inc., which is a registered broker-dealer and Member of SIPC, and, in other jurisdictions, by locally registered entities. BofA Securities, Inc. is a registered futures commission merchant with the CFTC and a member of the NFA.

BofA entities (for example Bank of America Europe Designated Activity Company and BofA Securities Europe SA) and branches provide financial services to the clients of BofA and may outsource/delegate the marketing and/or provision of certain services or aspects of services to other branches or members of the BofA group (for example in the UK) to the extent permitted by applicable law. Your service provider will remain the entity/branch specified in your on boarding documentation and/or other contractual or marketing documentation even where you communicate with BofA staff that operate from a different entity or branch which is acting for and on behalf of your contractual service provider in their communications with you. If you are unsure who your contractual service provider is or will be, please contact your usual BofA contact.

For BofA Securities entities in EMEA, please see additional information via the following link: [https://business.bofa.com/content/dam/boamlimages/documents/articles/ID17\\_1174/bofaml\\_entities\\_list.pdf](https://business.bofa.com/content/dam/boamlimages/documents/articles/ID17_1174/bofaml_entities_list.pdf)

Investment products offered by Investment Banking Affiliates:

Are Not FDIC Insured | Are Not Bank Guaranteed | May Lose Value

Instinct® and Instinct X® are trademarks of Bank of America Corporation.

© 2023 Bank of America Corporation. All rights reserved.