
SOLUTIONS IN GLOBAL MARKETS

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FIXED INCOME & CURRENCIES

ALGO – FX SPOT EXECUTION

JUNE 2018

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FOREIGN EXCHANGE

Algorithmic FX Execution

- Algorithmic Execution Strategies aim at minimizing market impact and transaction costs through the use of high speed technology.
- Algorithms are implemented for a wide range of clients, from Financial Institutions to Corporates, and can offer a wide range of execution styles based on the market conditions and client requirements.
- Societe Generale has developed its own FX algorithmic execution tool, allowing you to trade directly in the market in a controlled and anonymous way.
- Key elements:

ANONYMITY

- Your algorithmic orders flow through a segregated platform

REDUCED FOOTPRINT

- We apply logical decision-making to reduce signalling in the market and we utilise a variety of liquidity sources to protect the confidentiality of your order
- You can select a strategy according to your time constraint and footprint sensitivity

PROOF TESTED ALGORITHMS

- We use the same algorithms in the execution and hedging of our own market making books, and are continually refining them

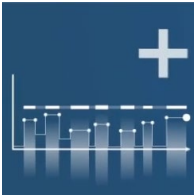
TRANSPARENCY

- In the post trade process, you will benefit from a detailed Transaction Performance Analysis for total transparency

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TWAP+

Objectives



- TWAP+ is an algorithm that allows you to trade along a predefined scheduled profile to get an average price over a time interval
- The new functionality introduces a camouflage mode which allows you to randomly vary intervals and help avoid detection in the market

Parameters

- **Currency Pair**
- **Way of the order:** Sell or Buy, Currency 1 or Currency 2
- **Nominal** of the order in Currency 1 or Currency 2
- **Execution Period**
 - Start date and time / End date and time. Execution stops at 11pm London time
- **Clipping mode type**
 - Automatic / Manual / Incremental / Decremental
- **Clip Size**
 - In case of manual clipping mode
- **Limit Rate**
 - Mandatory in order to protect the end-user against extreme market moves
- **Spread Capture**
 - Option to leave passive orders between two “slices” to potentially benefit from market moves and improve execution price

TWAP+ Essentials

- **Short description**
 - A duration fixed strategy that splits its orders to minimize market impact and transaction costs
- **Execution style**
 - Large amounts, Medium to long duration
- **Footprint**
 - Medium
- **Client risk**
 - Being detected in the market
- **Use case**
 - All currency pairs.
- **Good to know**
 - Stealth may be increased by randomizing the slice intervals and amounts
 - Client can access Societe Generale Internal liquidity pool
- **Transaction Cost Analysis Report**
- **Execution fee**

During the execution period, client can

- Change the limit price
- Change the nominal amount
- Change the end time
- Stop the algo execution

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NIGHTJAR

Objectives



- The Nightjar is a stealthy strategy, used when discretion is more essential than speed
- The Nightjar algorithm inputs passive orders into the market (different liquidity pools) and aims for the highest level of discretion. It takes liquidity when opportunities arise

Parameters

- **Currency Pair**
- **Way of the order:** Sell or Buy, Currency 1 or Currency 2
- **Nominal** of the order in Currency 1 or Currency 2
- **Execution Period**
 - Start date, time and duration
- **Speed**
 - From SLOW, NORMAL or FAST
- **Limit Rate**
 - Mandatory in order to protect the end-user against extreme market moves

NIGHTJAR Essentials

- **Short description**
 - A passive execution that aims at highest degree of stealth to remain undetected
- **Execution style**
 - Medium / large amounts, Medium to long duration
- **Footprint**
 - Low
- **Client risk**
 - Partial execution, final price worse than initial spot risk transfer price for full size
- **Use case**
 - All major currency pairs, most of G10 crosses
- **Good to know**
 - May not execute the full requested amount for some less liquid currency pairs
 - Client can access Societe Generale Internal liquidity pool
- **Transaction Cost Analysis Report**
- **Execution fee**

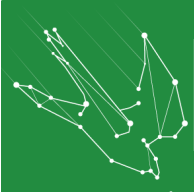
During the execution period, client can

- Change the limit price
- Change the nominal amount
- Change the end time
- Change the speed
- Stop the algo execution

FOREIGN EXCHANGE

FALCON

Objectives



- The Falcon is a pro-active strategy, used when speed is more essential than stealth
- As soon as a certain spot limit is reached, the Falcon algorithm targets several different liquidity pools, seeking to execute your order as quickly as possible without leaving any visible trace

Parameters

- **Currency Pair**
- **Way of the order:** Sell or Buy, Currency 1 or Currency 2
- **Nominal** of the order in Currency 1 or Currency 2
- **Execution timing**
 - Start date, time and duration
- **Speed**
 - SLOW, NORMAL or FAST
- **Limit Rate**
 - Mandatory in order to protect the end-user against extreme market moves

FALCON Essentials

- **Short description**
 - A limit order that remains undetected until the market level matches its interest
- **Execution style**
 - Moderate amounts, Short duration
- **Footprint**
 - High
- **Client risk**
 - Zero or partial execution
- **Use case**
 - Major currency pairs
- **Good to know**
 - Client cannot access Societe Generale Internal liquidity pool
- **Transaction Cost Analysis Report**
- **Execution fee**

During the execution period, client can

- Change the limit price
- Change the nominal amount
- Change the end time
- Stop the algo execution

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Algorithmic FX Execution Additional Information

NIGHTJAR INDICATIVE SPEED OF EXECUTION

	SLOW	NORMAL	FAST
EUR/USD	375 mm/h	750 mm/h	1500 mm/h
USD/JPY	250 mm/h	500 mm/h	1000 mm/h
GBP/USD	100 mm/h	200 mm/h	400 mm/h
AUD/USD	150 mm/h	300 mm/h	600 mm/h
USD/CAD	90 mm/h	180 mm/h	360 mm/h
USD/CHF	45 mm/h	90 mm/h	180 mm/h
EUR/JPY	200 mm/h	400 mm/h	800 mm/h
EUR/GBP	80 mm/h	160 mm/h	320 mm/h
EUR/CHF	38 mm/h	75 mm/h	150 mm/h
DKK, NOK, SEK	50 mm/h	100 mm/h	200 mm/h
USD/CNH	125 mm/h	250 mm/h	500 mm/h
HKD, SGD, Other G10 pairs	50 mm/h	100 mm/h	200 mm/h
Other EM pairs	25 mm/h	50 mm/h	100 mm/h

The above amounts are indicative only, and dependent on time of day and prevailing market conditions.

LIQUIDITY POOLS

- EBS Market, Reuters Matching, Currenex, Edgewater Markets, FastMatch, FXAll OrderBook, GTX, CBOE FX, PARFX, Integral

ORDER GENERATION

- All orders may be active until the roll of value date, which is:
 - NZD pairs: up to 7 AM, Wellington time (8 PM London when in BST)
 - Up to 5 PM NY time for the other currency pairs (10 PM London time in general)

CONFIDENTIALITY

- At on-boarding, clients can ask that the principal sales covering their account does not see their algorithmic orders

PLATFORMS



Bloomberg

FX Connect®

alpha

SG FIX API

TS TRADINGSCREEN

EBS

DEUTSCHE BÖRSE GROUP

CURRENCY PAIRS

- **G10:** AUD/CAD, AUD/CHF, AUD/JPY, AUD/NZD, AUD/USD, CAD/CHF, CAD/JPY, CHF/JPY, EUR/AUD, EUR/CAD, EUR/CHF, EUR/DKK, EUR/GBP, EUR/JPY, EUR/NOK, EUR/NZD, EUR/SEK, EUR/USD, GBP/AUD, GBP/CAD, GBP/CHF, GBP/JPY, GBP/NOK, GBP/NZD, GBP/SEK, GBP/USD, NOK/SEK, NZD/CAD, NZD/CHF, NZD/JPY, NZD/USD, USD/CAD, USD/CHF, USD/DKK, USD/JPY, USD/NOK, USD/SEK
- **EM:** CNH/SEK, EUR/CNH, EUR/CZK, EUR/HKD, EUR/HUF, EUR/MXN, EUR/PLN, EUR/RON, EUR/RUB, EUR/SGD, EUR/TRY, EUR/ZAR, USD/CNH, USD/CZK, USD/HKD, USD/HUF, USD/ILS, USD/MXN, USD/PLN, USD/RUB, USD/SGD, USD/THB, USD/TRY, USD/ZAR

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Societe Generale Proprietary Transaction Cost Analysis example

Performance Analysis

- The Performance Analysis tool helps you to assess the effectiveness of different strategies
- Full details on the strategy outcome and the performance of the algorithm are provided
- Distribution pattern over execution venues is revealed and the individual trade execution details listed by time and venue is disclosed

Order Summary

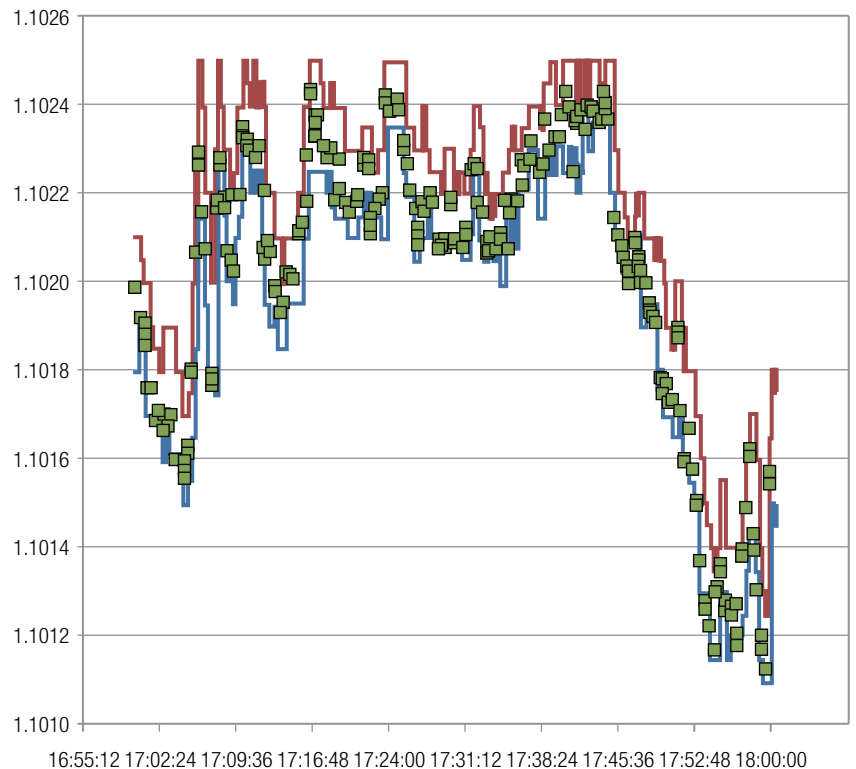
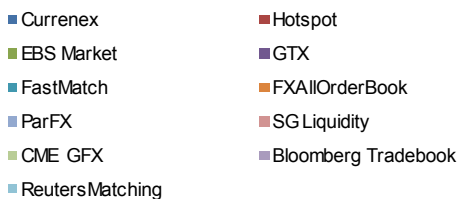
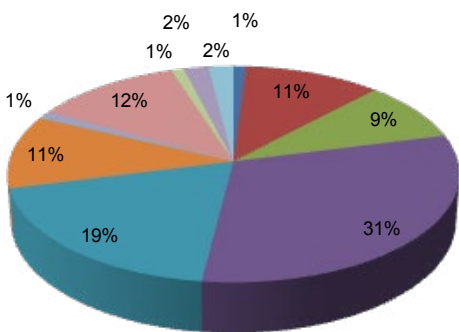
Order ID	OMS_OMS000188472_259548983
Ccy Pair	EUR/USD
Direction	Sell
Amount Sell EUR	200,000,000
Amount Buy USD	
Fees (SG liquidity)	50 /mm
Fees (markets)	50 /mm
Algorithm	TWAP
Limit Price	1.08000
Start Time (UTC)	2015-10-30 17:00:00
End Time (UTC)	2015-10-30 18:00:00
Include SG Prices	Yes
ClippingMode	Manual
ClipSize	1,250,000
Dodging	No
SpreadCapture	No

Execution Summary

Amount Sell EUR	200,000,000
Amount Buy USD	220,393,600
Gross Rate	1.1020240
Net Rate	1.1019680

Performance Benchmark

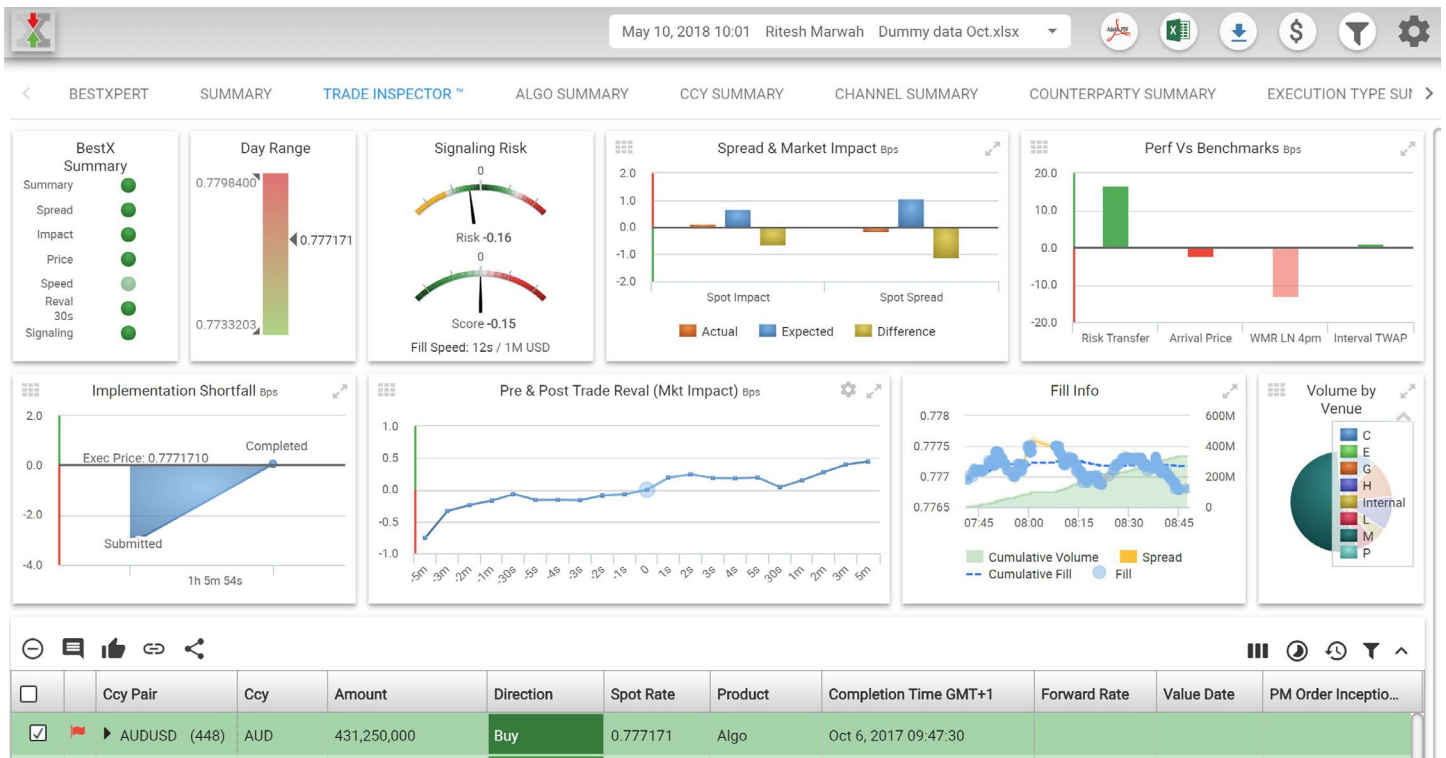
Benchmark	Rate	Perf. (bp)	Perf. (EUR)
Mid Market Arrival Price	1.101950	0.67	+13,430
Avg. Bid Market Price (TWAP)	1.101958	0.60	+11,956



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Independent 3rd party Transaction Cost Analysis provided by BestX

Societe Generale has partnered with BestX, leaders in the field of 3rd party TCA provision, to provide our clients with the option of receiving an independent TCA report on their Algo trades executed through SG. BestX's truly independent analysis enables clients to implement a flexible, rigorous, justifiable and repeatable execution process in accordance with market and regulatory evolution.



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