

### Pioneering SOR technology



In 2007, Neonet was an early adopter of Smart Order Routing technology and introduced its first Smart Order Router (SOR). This was done in response to fragmentation in the market. Neonet's SOR is one of the cornerstones of its electronic offering. Neonet owns the proprietary technology and fully controls its SOR development and operation. Neonet's view is that best execution is achieved by understanding and managing the micro structure of the markets.

### SOR - Our Best Execution Policy

Neonet's SOR is used by all electronic orders sent to Neonet. This ensures Neonet's ability to safeguard its best execution policy. Clients can also actively choose to bypass our SOR and direct an order to a specific venue.

### Our implementation

The driving principle behind Neonet's SOR is to normalise and consolidate all trading venues into one virtual venue similar to what existed before the market became fragmented. The SOR is then used as the underlying technology for executing all algorithms, DMA and care orders. The objective is that algorithms and users remain unaffected by fragmentation. All of that is taken care of at the SOR level.

### Handling of aggressive orders

Neonet's benchmark is the consolidated best price across all venues. A snapshot of the market data is taken as a reference and later used for calculating the hit-rate.

For aggressive orders the SOR accesses all venues leaving no time for HFT to react. The SOR looks at venues with the objective of generating as few orders and trades as possible in order to minimise information leakage and achieve the highest possible hit rate. Other factors considered are distance to venue and deviation of latency.

### Handling of passive orders

Passive orders are treated individually based on advanced settings, primarily relating to order size, trading patterns per venue and individual stock characteristics. As a straightforward example larger orders will normally be posted on multiple venues to increase probability of execution. Smaller orders are typically posted on one venue in order to maintain a decent ticket size.

Passive orders are constantly monitored by the SOR to react on market movements in the best interest of clients. For example, if the SOR has been posting passive on one venue and if market conditions change, the SOR will automatically seek to explore this opportunity by entering an aggressive order phase again.

### Differentiation

In the Client's best interest, Neonet's SOR is purely rule-based with the objectives of achieving:

- 1 The best price. Maximizing the likelihood of execution and minimising the cost of execution.
- 2 Fully dynamic. If an instrument goes fragmented or volume traded on different venues changes, the SOR automatically adapts to the new market conditions.
- 3 No conflicts. Neonet's SOR never delays execution through favouring internal matching or passive posting in proprietary dark pools.
- 4 Additional price improvement. Neonet's SOR aggressively accesses public dark pools on bid, mid and offer. Offering price and volume improvement compared to the consolidated best lit prices across all venues.
- 5 Un-conflicted quality verification. Neonet use LiquidMetrix, a third party execution quality and TCA provider to get un-conflicted feedback on performance.
- 6 Constant optimisation. Neonet's SOR reacts to every change in the market (order, trade) and never rests passively without re-evaluation of all market events.

### Execution desk

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### Neonet's technology philosophy

Our SOR is an in-house developed algorithm that works with active benchmarks of latency, deviation of latency and the timing of orders. Statistics such as venue market shares, average daily volume and average trade size are used in combination within a framework of rules that operate the SOR's behaviour. Neonet have dedicated teams working with the development, benchmarking and fine tuning of the SOR. Neonet operates its entire trading infrastructure in-house, from market access to EMS/OMS.

Neonet offers a wide range of external independent execution quality benchmarks. These include:

- 1 Hit-rate.
- 2 Trading within European Best Bid and Offer.
- 3 Spread Capture (trade based). Monitoring posting strategies of the SOR ie Venues used.
- 4 Real Spread Capture (from posting to trade, including peg-up's and downs). Monitoring the algorithms posting strategy and the SOR.

### SOR performance - Example

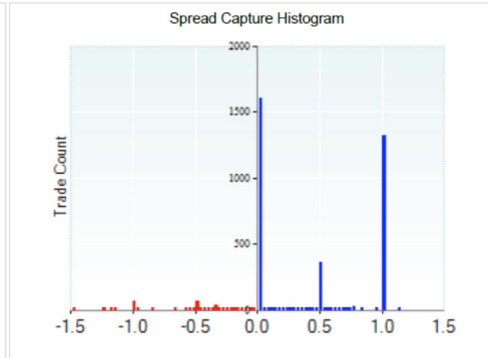
#### Performance Summary

	% By # of Trades	% By Value Traded
Percentage Success	99.90%	99.95%
Percentage Better	48.36%	59.87%
Percentage Equal	50.73%	38.99%
Percentage Worse	0.10%	0.05%
Not Benchmarked (N/B)	0.81%	1.09%

Average Improvement/Shortfall Value **4.96 BPS**  
(€10,923)

Spread Capture **43.58%**

SOR Improvement Potential Value **0.01 BPS**  
(€13)



#### Performance Breakdown by Exec Venue

	# Trades	Value (€)	Vol (%)	% Better	% Equal	% Success	% N/B	SOR (BPS)	Imp (BPS)	Spread (BPS)	SC (%)	Spread (BPS)	SC (%)
BATD	167	1,335,011	6.00%	86.42%	13.58%	100.00%	0.00%	0.00	4.63	10.69	45.17%	10.69	45.17%
BATE	40	139,544	0.63%	0.00%	100.00%	100.00%	0.00%	0.00	-3.01	9.52	-31.60%	9.52	-31.60%
CHID	293	2,652,965	11.92%	87.18%	11.16%	100.00%	1.66%	0.00	6.44	13.96	46.14%	13.96	46.14%
CHX	960	3,256,055	14.63%	49.68%	48.46%	99.63%	1.48%	0.04	4.49	9.85	45.64%	9.85	45.64%
FNFI	1	2,180	0.01%	0.00%	100.00%	100.00%	0.00%	0.00	0.00	55.05	0.00%	55.05	0.00%
NORDIC@MID	70	487,875	2.19%	94.73%	5.27%	100.00%	0.00%	0.00	5.63	12.19	46.16%	12.19	46.16%
SGMX	37	140,256	0.63%	90.45%	0.00%	100.00%	9.55%	0.00	4.79	8.64	55.48%	8.64	55.48%
TROD	88	612,358	2.75%	99.80%	0.20%	100.00%	0.00%	0.00	4.92	10.12	48.60%	10.12	48.60%
TROX	85	264,135	1.19%	0.00%	100.00%	100.00%	0.00%	0.00	-0.94	8.40	-11.17%	8.40	-11.17%
XHEL	2,067	12,228,688	54.96%	52.47%	47.39%	100.00%	0.14%	0.00	4.93	10.26	48.06%	10.26	48.06%

### Sample Hit-rate statistics



Graph for VWAP orders July 2015. 'Strict success %' is percentage of orders where 100% of the order gets executed given the available lit volume - hit, anything else accounts as a failed attempt. 'Volume success %' measures percentage of volume that gets executed and is higher than 100% of lit volume because of use of dark pools enabled by incoming orders with a volume exceeding the available liquidity.

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