

SMBC
NIKKO

Dark pool/SOR guide

Overview

- Internal crossing service that identifies orders which can be matched and traded off exchange
 - ✓ Executes immediately on ToSTNeT after internally identifying matches
- Offers liquidity and potential price improvement within bid/offer spread in TSE
- Strictly adheres to confidentiality – no offering of bid/offer indications
- Adopts low latency architecture running closely in tandem with SOR and algorithm strategies

Instrument Universe

TSE primary listed common stocks, ETFs and REITs (excluding foreign stocks and foreign ETFs)

Hours

- TSE trading hours (09:00~11:30, 12:30~15:00)
- Crosses only during continuous trading sessions.
- No crosses generated during:
 - ✓ Market pre opens
 - ✓ Special quotes/sequential trade quotes
 - ✓ Trading halt/suspension

Matching Rules

Priority	①Price ②Time of order received
Tick size	1/10 of TSE
Lot size(unit)	Same as TSE
Peg type	Matching price control within TSE bid/offer as follows ✓ Mid : Matches at mid price or better ✓ Far (default) : Matches at far touch or better
Min qty	Minimum execution quantity. Matches only when the size is equal to or more than the size specified
Counterparty control	<ul style="list-style-type: none"> • No cross with prop <ul style="list-style-type: none"> ✓ (optional) No dark pool matches with prop • No cross with the same client group/account <ul style="list-style-type: none"> ✓ (optional) No dark pool matches with orders from the same client group ✓ (NOT optional) No dark pool matches with orders from the same account. This is always applicable • No cross with external brokers <ul style="list-style-type: none"> ✓ (optional) No dark pool matches with order flow from external brokers • No cross with liquidity providers <ul style="list-style-type: none"> ✓ (optional) No dark pool matches with order flow from liquidity providers
Matching price restriction	<ul style="list-style-type: none"> • Within TSE bid/offer (inclusive) • Within a range of 1% or 2JPY of last traded price in TSE • Within day's high/low prices in TSE

Notes

	Description	Note
Operator	SMBC Nikko Securities Inc. (https://www.smbcnikko.co.jp)	No connectivity to any external dark pools
Participation of proprietary trading	Yes (proprietary/principal)	Counterparty control (not to get crossed with prop) can be specified
Participants	<ul style="list-style-type: none"> • Institutional investors (domestic/international) • Liquidity providers • External brokers (securities firms) • Proprietary/principal trading 	<ul style="list-style-type: none"> • No flow from retail (individual investors) • Liquidity providers: clients who provides liquidity in dark pool via electronic trading channels
Reference market	Tokyo Stock Exchange	<ul style="list-style-type: none"> • Matches only within bid/offer prices of the reference market (inclusive) • Matches only when bid/offer prices in the reference market are available
Matching time vs. execution time	Matched prices at matching times in dark pool are guaranteed to be within bid/offer prices of the reference market, whereas execution prices at execution times in ToSTNeT are not always within the bid/offer prices due to the time difference between matching and execution	<ul style="list-style-type: none"> • Matching time <ul style="list-style-type: none"> ✓ Time when dark pool internally identifies a match between buy and sell orders • Execution time <ul style="list-style-type: none"> ✓ Time when ToSTNet executes orders sent by dark pool after it identifies a match

Example 1

- Order to dark pool
 - ✓ Side: Buy
 - ✓ Qty: 500 shares
 - ✓ Price limit: none (@market)
 - ✓ Peg type: Mid
- Executions
 - ✓ 100 shares @ 100.4
 - ✓ 200 shares @ 100.5
 - ※Peg type=Mid restricts the matches at mid or better
- Remaining qty
 - ✓ 200 shares posted in the DP order book with price pegging at mid price
(Effective price limit automatically updated following the changes of bid/offer in the ref market)

DP	TSE	price	TSE
	1,000	101	
200		100.7	
100		100.6	
200		100.5	
100		100.4	
		100	100

Example 2

- Order to dark pool
 - ✓ Side: Buy
 - ✓ Qty: 2,000 shares
 - ✓ Price limit: none (@market)
 - ✓ Peg type: Far
 - ✓ Min qty: 500 shares
- Executions
 - ✓ 500 shares @ 100.5
 - ✓ 800 shares @ 100.7
 - ※ No matches below Min qty specified
- Remaining qty
 - ✓ 700 shares posted in the DP order book with price pegging at far touch
(Effective price limit automatically updated following the changes of bid/offer in the ref market)

DP	TSE	price	TSE
	1,000	101	
800		100.7	
100		100.6	
500		100.5	
100		100.4	
		100	100

Overview

- Smart order routing offers access to multiple alternative trading venues in addition to the target market and achieves optimal executions at best available prices among venues
- Architectural advantage of SOR running within the same process as dark pool allows :
 - ✓ Low latency of order placements and executions with low risk of missing available opportunities in alternative trading venues as well as the target market
 - ✓ Efficient queue priority keeping in the target market

Routing Venues

- Exchanges (Tokyo, Nagoya, Fukuoka, Sapporo)
- PTS (SBI Japannext, Cboe Japan, Osaka Digital Exchange)
- Dark pool

Hours

- Trading hours of the target market
- No routing to alternative venues during:
 - ✓ Market pre opens
 - ✓ Special quotes/sequential trade quotes
 - ✓ Trading halt/suspension

Routing Rules

- 3 core steps of the routing logic

Dark Sweep	Routes an IOC order to dark pool only when it finds an opportunity to cross at better or equal price levels vs. all available venues. No routing when there is nothing to cross with to minimize the overall latency <ul style="list-style-type: none"> • Low risk of being gamed as SOR does not wait for executions coming back from ToSTNet to move onto the next step (Lit Sweep and Post)
Lit Sweep and Post	Simultaneously fires slices to the target market as well as alternative lit pools based on the consolidated order book <ul style="list-style-type: none"> • IOC orders to alternative lit pools with optimal price limit to minimize the risk of missing the best execution opportunity • Order to the target market with the specified price limit/order type/time in force to obtain the best queue priority
Shadow	Posts an indicative order for remaining qty also in dark pool when the order is not fully filled in the target market

Price Control

- Applies internal price limit as described below when routing slices to alternative trading venues
 - ✓ Price that does not trigger special quote/sequential quote in target market as well as alternative venues
 - ✓ Day's high price (for buy) / day's low price (for sell) of the target market

Example 1

Buy 3,000 shares @ 101

1. Dark sweep

DP	ODX	Cboe	SBI	TSE	Price	TSE
				1,000	101	
		500			100.7	
			300		100.6	
	200				100.5	
100					100.4	
					100	100

2. Lit sweep and Post

DP	ODX	Cboe	SBI	TSE	Price	TSE
				1,000	101	
		500			100.7	
			300		100.6	
					100.5	
	200				100.4	
					100	100

3. Shadow

DP	ODX	Cboe	SBI	TSE	Price	TSE	DP
					101	900	(900)
					100.7		
					100.6		
					100	100	

	TSE	ODX	Cboe	SBI	DP
qty	-	-	-	-	100
px limit	-	-	-	-	100.4
TIF	-	-	-	-	IOC

	TSE	ODX	Cboe	SBI	DP
qty	1,900	200	500	300	-
px limit	101	101	101	101	-
TIF	DAY	IOC	IOC	IOC	-

	TSE	ODX	Cboe	SBI	DP
qty	-	-	-	-	(900)
px limit	-	-	-	-	101
TIF	-	-	-	-	DAY

Example 2

Buy 2,000 shares @ market

ODX	Cboe	SBI	TSE	Price	Price
			1,000	102	
				101.7	
	500			101.6	
200			1,000	101	
		300		100.7	
	500			100.6	
				100	100

	TSE	ODX	Cboe	SBI	DP
qty	1,000	200	500	300	-
px limit	成行	101	101	101	-
TIF	DAY	IOC	IOC	IOC	-

Account configuration

- SOR/Dark pool configuration can be specified as below

Enable SOR	Specifies whether to enable SOR(Smart Order Routing). If not enabled, orders are routed only to the target market specified per order
SOR routing venues	Specifies PTSs (SBI Japannext, Cboe Japan, Osaka Digital Exchange) to include for lit pool sweeping
Enable Dark Pool	Specifies whether to enable dark pool
(Dark pool) Peg type	<p>Specifies the peg type for dark pool orders</p> <ul style="list-style-type: none"> • Mid <ul style="list-style-type: none"> ✓ Matches at mid price or better of the reference market • Far (default) <ul style="list-style-type: none"> ✓ Matches at far touch or better of the reference market
(Dark pool) Counterparty control	<p>Specifies the counterparty control for dark pool matches</p> <ul style="list-style-type: none"> • No cross with prop <ul style="list-style-type: none"> ✓ (optional) No dark pool matches with prop • No cross with the same client group/account <ul style="list-style-type: none"> ✓ (optional) No dark pool matches with orders from the same client group ✓ (NOT optional) No dark pool matches with orders from the same account. This is always applicable • No cross with external brokers <ul style="list-style-type: none"> ✓ (optional) No dark pool matches with order flow from external brokers • No cross with liquidity providers <ul style="list-style-type: none"> ✓ (optional) No dark pool matches with order flow from liquidity providers

Evidence report

- Reports on SOR and dark pool execution details are available upon request

SOR	Reports on PTS execution details: <ul style="list-style-type: none">• Executed quantity• Executed price• Executed time• Executed venue• Reference bid price of the target market at the time of routing decision• Reference offer price of the target market at the time of routing decision✓ Reference bid/offer price: ask/bid price of the target market after SOR executions based on SOR's calculation/estimation
Dark pool	Reports on dark pool execution details: <ul style="list-style-type: none">• Executed quantity• Executed price• Executed time• Bid/offer prices of TSE at the time of internal matching

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