

SIGMA X HONG KONG – USER GUIDELINES

EFFECTIVE DATE – [5 OCTOBER 2018]

SIGMA X Hong Kong (“SIGMA X”) is an automated trading service on which orders for securities listed on the Stock Exchange of Hong Kong Limited (“SEHK”) may be matched. SIGMA X is operated by Goldman Sachs (Asia) Securities Limited (“GSASL”) under a Type 7 (providing automated trading services) license granted by the Securities and Futures Commission (the “SFC”).

These user guidelines (“Guidelines”) are prepared under paragraph 9 (ALP Guidelines) of Schedule 8 to the Code of Conduct for Persons Licensed by or Registered with the Securities and Futures Commission, which requires GSASL to prepare and publish on its website comprehensive and accurate guidelines concerning SIGMA X, which properly and fairly provide guidance to the users of SIGMA X concerning the operation of SIGMA X.

Existing clients of any member of the Goldman Sachs group of companies (such companies together, “GS”, “we” or “us”) who wish to have their orders routed to SIGMA X must meet the requirements set out in paragraph 2 (User restrictions) below. In these Guidelines, clients of GS which are permitted to route orders to SIGMA X are referred to as “users”.

1. Trading and operational matters

1.1 Price: Transactions may be matched in SIGMA X at or within the prevailing best bid and offer on the SEHK (see paragraph 4 below).

1.2 Mid-or-better: Users can be enabled to only match in SIGMA X at the mid-price or better. The mid-price is calculated using the prevailing best bid and offer on the SEHK. When this setting is enabled, crosses would not occur at prices worse than the mid-price (e.g. no higher than the mid-price when buying, and no lower than the mid-price when selling). Please contact your sales representative to enable this setting.

1.3 Trading hours: SIGMA X will match orders during the Continuous Trading Session excluding Extended Morning Session on the SEHK. SIGMA X will not match orders during the Pre-Opening Session. Orders placed shortly before the close of a trading session may be suspended, rejected, cancelled, or routed to the SEHK.

1.4 Trade reporting: Transactions conducted on SIGMA X will be reported to the SEHK in accordance with the rules and regulations of the SEHK.

1.5 Execution time: The execution time of a transaction matched on SIGMA X will be based on the execution timestamp when SIGMA X matches the orders.

1.6 Order size: The minimum cross size for matching on SIGMA X is the SEHK board lot for the relevant securities, and the maximum cross size is 3,000 board lots.

1.6.1 Minimum Executable Quantity: Users may configure their orders to only match opposite orders of or above a specific quantity in SIGMA X. When this setting is enabled for an order, SIGMA X will match the order only when a single opposite side order has a quantity equal to or larger than the minimum executable quantity.

1.7 Order types: SIGMA X supports limit orders and pegged orders (e.g., peg-bid, peg-ask, peg-mid) with a limit price.

1.8 Order and matching restrictions: Bids and offers placed by the same user, short sell orders, and orders for securities which are subject to a trading suspension or trading halt, will not be matched on SIGMA X. Orders which do not contain all information required by us (including but not limited to trader identity) will not be matched on SIGMA X, and may be suspended, rejected, cancelled, or routed to the SEHK. Additional matching restrictions may also be imposed from time to time as we deem appropriate.

1.9 Suspension of SIGMA X and contingency arrangements: We may suspend operation of SIGMA X, either generally or in relation to specific securities, at any time without prior notice. The operation of SIGMA X will be suspended if, among other things, (a) the SEHK is closed, (b) market data is unavailable, (c) we are unable to report matches to the SEHK on a timely basis for any reason, or (d) if the usage capacity of SIGMA X is exceeded.

If SIGMA X is not operational due to system or component failure or other reasons, unexecuted orders may be suspended, rejected, cancelled, or routed to the SEHK. Please contact your sales representative regarding alternative means of executing orders, including routing to the SEHK.

2. User restrictions

Before permitting a client to route its first order to SIGMA X, we are required to:

- take all reasonable steps to ascertain, and have in place measures which ensure, that the client is a "qualified investor"; and
- bring these Guidelines to the client's attention.

For this purpose, "qualified investor" means:

(a) A "professional investor" within the meaning of paragraphs (a) to (i) (inclusive) of the definition of "professional investor" contained in section 1 of Part 1 of Schedule I of the Securities and Futures Ordinance; or

(b) A person within the meaning of section 3(a), (c), d(i), d(iii) or d(iv) of the Securities and Futures (Professional Investor) Rules.

3. Matching methodology and order routing

3.1 Matching methodology: Orders are matched on the basis of price-time priority, provided that:

- (a) Client orders will have priority over firm orders when such orders are being transacted at the same price, irrespective of the time when orders are placed (see paragraph 8 below); and
- (b) Users may elect not to match against firm orders or specific types of order flow. Please contact your sales representative to record your preferences.

3.2 Order routing: Orders from eligible users may be routed to SIGMA X via the standard execution channels as agreed with GS. Orders from eligible users which are routed to the firm's smart order router or algorithms may be on-routed to SIGMA X.

3.3 Opting out: Users who are permitted to route orders to SIGMA X may, at any time, opt-out of SIGMA X for all orders.

4. Transaction pricing

Orders will only be matched in SIGMA X at or within the prevailing best bid and offer on the SEHK. For this purpose, we rely on the pricing information received from the SEHK or other market data vendors we consider reliable. The time at which the bid and offer information is

obtained may differ from the execution time (see paragraph 1.5 above). In exceptional circumstances, pricing information may be delayed due to reasons beyond our control, which may result in orders being matched in SIGMA X outside the prevailing best bid and offer on the SEHK.

If the Volatility Control Mechanism has been triggered for a covered stock on the SEHK, orders for that stock will only be matched in SIGMA X at or within the applicable price bands during the cooling-off period. Orders outside of the applicable price bands will remain in SIGMA X but will not be considered eligible for matching until the cooling-off period has ended.

5. Order amendment and cancellation

Users may amend or cancel unexecuted orders in the same manner as the initial order is placed.

Orders which are not executed by the close of the trading day will be removed from SIGMA X, and will not be automatically rolled over for next day trading.

Any amendment of the price of an order, and any increase in the quantity of an order, will result in loss of queue priority of the order in SIGMA X.

Orders may also be suspended, rejected, cancelled or re-routed as described in paragraphs 1.3, 1.8 and 1.9.

6. Internal controls to ensure the fair and orderly functioning of SIGMA X and to address potential conflicts of interest

6.1 System controls enforce the fair and orderly functioning of SIGMA X, including the priority, order routing and execution methodologies mentioned above. We also conduct real-time and end of day monitoring of the system to ensure matching behavior is consistent with design.

6.2 Conflicts of interest are mitigated by the following:

- Users may opt out of matching against firm orders in SIGMA X.
- Client orders are matched on the basis of price-time priority, and have priority over firm orders of the same price, regardless of the time of the firm order (see paragraphs 3.1 and 8).
- Real-time visibility of unexecuted orders is limited on a need-to-know basis (see paragraph 10).
- GS firm traders do not have access to real-time information relating to orders or transactions conducted on SIGMA X generally, other than transactions resulting from orders placed by the GS firm trading team.
- Users are given adequate information about SIGMA X (including in these Guidelines) before placing their first order in SIGMA X.

7. Potential risks associated with transactions conducted on SIGMA X

Trading through SIGMA X exposes users to risks associated with system or component failure. In the event of system or component failure, users may not be able to enter new orders, execute existing orders, or modify or cancel orders that were previously entered. System or component failure may also result in loss of orders or order priority.

Although orders will only be matched in SIGMA X at or within the prevailing best bid and offer on the SEHK, the execution price for orders matched in SIGMA X may not always be better than the price that could have been achieved on the SEHK or other execution venues.

If two opposing orders are matched in SIGMA X, but we do not receive SEHK acknowledgement of the match within a specified time, the match will be deemed not to have occurred.

8. Transaction of firm orders

In these Guidelines, “firm order” means an order for:

- (a) the account of GS trading as principal (including client facilitation and synthetic hedge orders);
- (b) any account in which GS has an interest; or
- (c) the account of any employee or agent of GS.

Firm orders raised by Goldman Sachs trading desks may be routed to SIGMA X.

Client orders may be matched against firm orders, unless the user has previously requested in writing that their orders may not be matched against firm orders.

Client orders will have priority over firm orders when such orders are being transacted at the same price, irrespective of the time when orders are placed.

9. Aggregation of orders

Not applicable.

10. Access to trading information on SIGMA X

Access to information concerning orders routed to, and transactions conducted in, SIGMA X is limited to staff members whose access to such information is necessary to enable SIGMA X to operate satisfactorily and efficiently.

Department	Title	Real-time visibility of <u>all</u> unexecuted orders in SIGMA X (pre-execution)	Real-time visibility of <u>all</u> transactions executed in SIGMA X (post-execution)	Rationale
Technology and Equity Strats	First line support and order management system developers (all levels)	Yes	Yes	Necessary for system maintenance and client support
Equities	Electronic trading coverage team (all levels)	No	No (only transactions of covered clients)	Necessary for client support, troubleshooting and risk management purposes
Equities	Sales trading coverage team (all levels)	No	No (only transactions of covered clients)	Necessary for client support, troubleshooting and risk management purposes
Equities	Firm trading team (all levels)	No	No (only transactions of firm trading team)	Necessary for risk management purposes

Transactions matched on SIGMA X are reported to the SEHK, and the symbol, price, quantity and time of the transactions will be public information. Transaction information (including client

identity information) will also be submitted to the SFC on a regular basis and upon request by the SFC in accordance with applicable regulatory requirements.

Other teams (such as Operations and Compliance) may have access to information on transactions matched on SIGMA X on a post-trade basis. Other end of day reports (which may contain client identity information) are generated to monitor the performance of SIGMA X and the opportunities to improve performance. Electronic trading coverage, strats and technology personnel have access to these reports to identify issues and opportunities for improving the performance of SIGMA X.

11. Information for users

We will make available regular transaction analyses concerning the transactions that are conducted on users' behalf on SIGMA X upon request.

12. Amendment of Guidelines

We may from time to time amend these Guidelines. The most recent version will be available on the Goldman Sachs Electronic Trading website at <https://www.goldmansachs.com/disclosures/> or on request.

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