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Liquidity : Goldman Sachs Alternative Liquidity Pool – SIGMA X in Asia

Goldman Sachs has compiled this frequently asked questions (“FAQ”) to assist you in understanding SIGMA X Australia, SIGMA X Hong Kong and SIGMA X Japan (together referred to as “SIGMA X” in this document), our alternative liquidity pools for trading cash equity products in Australia, Hong Kong and Japan respectively.

1. What is SIGMA X?

Goldman Sachs owns and operates three alternative liquidity pools in the Asia Pacific region: SIGMA X Australia, SIGMA X Hong Kong and SIGMA X Japan. The three pools all adhere to the local rules and regulations of their respective markets and, as such, may operate differently from each other and from liquidity pools in other markets. Where needed, these differences will be highlighted. For more information on our individual liquidity pools, links to public disclosures are provided on page 3 of this FAQ.

Please note that we have not covered Futures SIGMA X Japan in this FAQ.

2. What types of financial products are traded on SIGMA X?

All Asian instances of SIGMA X permit crossing in equity market products listed on the relevant local exchanges.

3. Who is eligible for access to SIGMA X?

SIGMA X offers equal access to a broad range of eligible participants from offshore and domestic sources including institutional long-only investors, hedge funds and broker-dealer clients. In addition to our clients, Goldman Sachs internal trading desks also access SIGMA X.

Internal and external market makers are not currently offered access to SIGMA X Australia and Hong Kong, while SIGMA X Japan has a select number of liquidity providers providing liquidity. Users of SIGMA X Japan have the option of not interacting with this flow if they choose.

Access to SIGMA X Australia and Hong Kong is only available through the Goldman Sachs suite of algorithms.

Access to SIGMA X Japan is allowed via our suite of algorithms or via direct posting through FIX.

4. Is SIGMA X a dark pool that only matches trades anonymously, without information leakage? Or will information regarding my orders be conveyed to potential liquidity providers?

The matching process for SIGMA X is completely internal, and SIGMA X will not disseminate any pre-trade information to internal trading desks or external counterparties. Executed trades are publicly reported where required by applicable rules.

5. Does SIGMA X match within the spread or at the spread?

SIGMA X Australia provides price improvement on every execution. All trades are executed at the midpoint of the current national best bid-offer (NBBO) spread at the time of matching.

In SIGMA X Hong Kong and Japan, orders can be matched at any price at or within the prevailing best bid-offer on the relevant primary exchange. However, clients can specify a “Mid-Or-Better” price constraint.

6. How will my orders interact with internal Goldman Sachs orders in terms of priority?

In SIGMA X Australia and Japan, all orders are matched on a strict price and time priority basis, irrespective of their source. Other parameters, including limit price and minimum executable quantity,

may affect the eligibility of an order to participate in the cross despite having time priority. The matching process does not distinguish between firm and client orders.

In SIGMA X Hong Kong, client orders must be given priority over firm orders. For this purpose, firm orders include GS hedge orders relating to client orders for equity derivative transactions. Therefore, orders in SIGMA X Hong Kong are matched in price, capacity (i.e. client or firm), time priority.

7. What order types are available in SIGMA X?

SIGMA X Australia supports Limit and Market orders.

SIGMA X Hong Kong supports Limit and Peg orders.

SIGMA X Japan supports Limit, Market and Peg orders.

8. Does SIGMA X route orders to any other external liquidity venue?

No.

9. Does SIGMA X connect to any other broker crossing systems?

SIGMA X allows connections from a select number of crossing system aggregators. However, SIGMA X will only receive orders from these systems and does not send outbound orders.

10. Can I choose whether my orders are executed against those from an external crossing system?

SIGMA X Australia provides the option to opt in or out of any flow received from external crossing system operators. SIGMA X Japan and Hong Kong treat aggregator flow as a standard agency order and as such do not offer opt-out functionality.

11. Does SIGMA X send or receive indications of interest (IOIs)? If so, is it an opt-in or opt-out process?

No.

12. Are SIGMA X trades exchange reported?

In line with the relevant regulatory requirements in Australia and Hong Kong, all trades crossed in SIGMA X Australia and Hong Kong must be reported to the relevant exchange after crossing. These trades may appear near real-time in the public trade feed.

In line with the relevant regulatory requirements in Japan, all orders matched on SIGMA X Japan are sent to ToSTNeT for execution.

13. What volume discount or rebate pricing models are available in SIGMA X?

SIGMA X does not offer volume discounts or maker / taker pricing models.

14. Who can see my orders in SIGMA X Australia, SIGMA X Hong Kong and SIGMA X Japan?

Generally, overall access to your order information is governed by Goldman Sachs' "need to know" policy, which is applicable to the personnel of The Goldman Sachs Group, Inc. and its affiliates (collectively, "Goldman Sachs"), and states that only those employees who have a need to know the information to perform their duties and carry out the purpose(s) for which the information was provided may have access to the information. Employees are bound to abide by, and trained regarding, the Goldman Sachs "need to know" policy. Accordingly, employees with access to a system in which such information resides should only refer to it if prompted to do so in connection with their trade processing-related or firm regulatory responsibilities.

GSET Coverage Representatives may require access to your order information more routinely for purposes of providing you with sales and execution services. In addition, as a global firm that processes a large

number of transactions daily and utilizes global, centralized processing systems in order to reduce operational costs and risk, other groups or individuals within Goldman Sachs may have access for purposes of discharging their broader responsibilities for oversight of the Goldman Sachs' risk, operational and systems infrastructure functions and may see your order information incidentally in the course of performing those responsibilities.

We may provide information about client orders and transactions to relevant regulators and exchanges, both regularly and on request.

15. Is Indicative fill supported?

For Japan only. Indicative fill, a message informing a client that the order has been matched in SIGMA-X, is passed back to the client via FIX while, simultaneously, the matched orders are sent to ToSTNeT for execution, reducing the latency from the match to the FIX execution, by not waiting for execution on ToSTNeT. This feature is opt-in, so please contact your client coverage for further details, if interested.

SIGMA X Australia and SIGMA X Hong Kong public disclosures

SIGMA X Australia is a non-displayed alternative liquidity pool which is owned and operated by Goldman Sachs Australia Pty Ltd. For further information on SIGMA X Australia, please refer to the SIGMA X Australia FAQs, which may be accessed at <http://www.goldmansachs.com/disclosures/australia-new-zealand/index.html>.

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Market Access : Equities Smart Order Router (SOR) in Australia, Hong Kong, Japan and India

Goldman Sachs' Asia Equities Smart Order Routers are designed to look for liquidity at the best price whilst minimizing information leakage. They do not take into account execution costs when deciding upon which venues to send orders, but will instead select venues based on liquidity and best price.

1. Where do you operate an SOR?

Goldman Sachs operates an SOR in Australia, Hong Kong, Japan and India.

2. Does Goldman Sachs connect directly to all exchanges and other market venues?

Our general practice is to establish direct connections to all major exchanges and market venues which trade a significant amount of liquidity. We may access certain exchanges via third party connections.

3. Which venues do you connect to?

- Australia SOR routes orders to the ASX, including ASX Trade Match lit order book and ASX CentrePoint, Chi-X Australia, and SIGMA X Australia.
- Hong Kong SOR routes client orders to the SEHK and SIGMA X Hong Kong.
- Japan SOR routes orders to the TSE, SBI Japan Next, Chi-X Japan and SIGMA X Japan.
- India SOR routes orders to the NSE and the BSE.

4. Can I instruct your SOR to select which venues to route orders?

Yes, for electronic flow, we can set up a customized trading solution that selects venues and routing priorities.

5. Does your SOR send or receive indications of interest ("IOIs")?

No.

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