

Algo Due Diligence Template

GENERAL

This general section outlines the core features of the algorithm. Providers may consolidate answers 1–5 into a table or grid if they wish to cover multiple algorithms with the same template.

Q1	Algo Provider (also referred to as “you” or “your” below as required):
A1	Commonwealth Bank Australia (CBA).
Q2	Algo name(s):
A2	Time Slice Order
Q3	Liquidity type (internal, external, hybrid):
A3	Hybrid
Q4	Products covered (spot, NDF):
A4	FX Spot
Q5	Description ¹ of algo(s):
A5	Time Slice: A limit or market order that splits up the total amount to be traded into a series of slices that will be executed over a specified time period.
Q6	Please describe any parameters or controls the user may adjust:
A6	Order type, Direction, Limit Price, Duration & Number of Slices.
Q7	Please specify if the product is built internally or externally:
A7	Internal.

CONFLICTS OF INTEREST

Some conflicts of interest may be expected but it is important to know what they are and what steps have been taken to manage them. This way the Algo User can make an informed decision.

Q8	If principal liquidity interacts with the Algo User’s order, how does this happen and what steps are taken to ensure the fill is a fair one from the order’s point of view?
A8	The algo orders are filled independently from principal market making activity by CBA Trading staff. The Head of the CBA Spot Trading Desk or their delegate is made aware of the algo order for oversight purposes only. The algo trades reside in a separate book. If the algo was to interact with CBA’s internal liquidity, it will only be when CBA’s price is ‘top of book’ ie best available price.
Q9	If another part of your business needs to hedge or trade in the same direction as the Algo User’s order, how are fills allocated between the two?

¹ You may find it helpful to refer to the ‘algo archetypes’ delineated in section 2.1 of [FX execution algorithms and market functioning](#)

A9	Any trades, whether algo or market trades, are executed in the order of the time they are received, in accordance with CBA's <u>FX Order Execution and Order Handling Disclosure</u> .
Q10	Are there any particular commercial interests in trading venues or other relevant service providers that interact with the algorithm provided by you? If so, how are such conflicts addressed?
A10	No.
Q11	Please elaborate on your role as regards market risk, counterparty risk, and settlement risk.
A11	CBA assumes market, counterparty and settlement risk.
Q12	Is there anything else of which you feel the Algo User should be aware?
A12	No

ALLOCATION POLICY

There are many different approaches to allocations. It is important to understand what happens in circumstances where multiple clients wish to trade or, indeed, when one order would be used to fill the order of another client.

Q13	If you have more than one client order wishing to trade in the same pair and on the same side, how are fills allocated amongst these orders?
A13	All algo orders are executed in the order of the time the algo order is received, in accordance with CBA's <u>FX Order Execution and Order Handling Disclosure</u>
Q14	If two client orders are eligible for execution netting, how does this process work?
A14	All algo orders are executed independently hence netting between two client orders is not possible. However, the underlying liquidity maybe be netted, without a CBA Trader awareness of individual algo orders, as part of the principal market making activity.

ROUTING POLICY

Routing policy is an important topic. There are several components such as how execution venues are evaluated, curated, and prioritised. Also covered is the question of what fairvalue mid the algo uses to make routing decisions and how information leakage is avoided when placing lit orders. Finally, internalisation is defined: some providers have a strict definition such as 'two algo orders netting' whereas others will include midbooks and trades where they have shown a skew through mid externally to incentivise another counterparty to fill them.

Q15	How are hedging execution venues evaluated, including both observable (spread, impact) and implicit costs (information leakage)?
A15	CBA manages risk using a single execution venue with a liquidity pool created from multiple liquidity sources which is regularly evaluated by reference to observable and implicit costs.
Q16	How do you prioritise between different execution venues (both external and internal sources) when routing orders?
A16	CBA has a single execution venue with a liquidity pool created from multiple liquidity sources. When selecting a liquidity source to execute against, priority is given to "best price" at all times.



Q17	If multiple clients enter orders in the same pair, will you aggregate these orders before placing orders externally or treat each client order individually and place multiple similar orders, which may compete with one another for fills?
A17	All algo orders are executed in the order of the time the algo order is received and each algo order is executed independently. As a result, netting between two client orders is not possible. However, the underlying liquidity maybe be netted without a CBA Trader awareness of individual algo orders, as part of principal market making activity.
Q18	What – if any – ongoing work do you do in order to curate execution venues, where curation is possible? Approximately how often is this conducted?
A18	CBA has a single execution venue with a liquidity pool created from multiple liquidity sources. CBA leverage comprehensive analytic tools to assess each liquidity source and hold monthly meetings with the liquidity source providers to ensure optimisation of execution.
Q19	Do you have any logic to avoid orders on venues where the order book is visible to all participants (lit execution venues) causing information leakage? If so, please describe it.
A19	CBA does not support lit orders.
Q20	Does the mid/fair-value used by the algorithm differ from the one used by your own market making system for pricing and risk management? If yes, please specify.
A20	CBA uses the same mid/fair-value.
Q21	Please define your understanding of ‘internalisation’ and, using an example, describe how this works in practice, demonstrating if/how your Algo Clients benefit from this process. If you wish to do so you may provide an indication of how much volume is internalised on average.
A21	CBA’s definition of ‘internalisation’ is to fill the client’s algo order using CBA’s liquidity whether it’s matching two opposite client trades or matching against CBA’s Trading Desk as part of principal market making activity. CBA may internalise.

SEGREGATION POLICY

Segregation policy is all about keeping order information private and reducing the risk of signalling.

Q22	Please describe if and how the algo orders are segregated within your institution.
A22	eFX Support and relevant CBA Sales staff have visibility of client’s algo orders in order to assist with any technical issues and provide Transaction Cost Analysis (TCA). No other CBA Sales staff have access to client’s algo orders. All CBA staff access rights are actively managed in accordance with CBA’s internal governance and policies and procedures. The Head of CBA Spot Trading desk or their delegate will have an overview of a client’s algo order for the purpose of oversight of the algo performance.
Q23	Can sales and trading personnel who provide intraday ‘market colour’ view algo orders at any stage? If so, what steps have been taken to minimise the risk of information leakage?



A23	Only relevant CBA staff will have visibility of client's algo orders and their use of client information must be in compliance with <u>CBA's FX Order Execution and Order Handling Disclosures</u> . As per internal conduct training and policies and procedures, the relevant CBA staff are prohibited from disclosing and/or discussing a client's algo order until the algo order is executed. Further, the relevant CBA staff can only discuss algo orders post trade in general terms (anonymised/aggregated) in accordance with CBA's policies and procedures and the <u>FX Global Code principles</u> .
Q24	Can discretionary traders who may enter or exit risk for your institution view algo orders at any stage? If so, what steps have been taken to minimise the risk of information leakage?
A24	Yes, as described in A22 above. CBA maintains strict rules around management of client information and disclosure which is set out in our policies and procedures and communicated to relevant staff via regular training. CBA Traders and principal market making activity is subject to continuous internal monitoring and surveillance.
Q25	Can an electronic market making system view algo orders at any stage? If so, what steps have been taken to minimise the risk of information leakage or misuse of information?
A25	No.
Q26	Are algo order flows included in any market positioning tools or analyses that other clients may use?
A26	No.
SAFETY FEATURES	
<i>Safety features might include fat-finger limits, kill switches or protections that automatically suspend the order when it trades too fast or in certain market conditions.</i>	
Q27	Please describe any in-built safety features you have that may cause an order to be suspended or rejected.
A27	Algo orders route through a separate portfolio which allows for liquidity to algo orders to be suspended if deemed necessary. To mitigate any significant risk arising from an unexpected catastrophic event, CBA's Trading Desk has access to a "Kill Switch" which allows the Trading Desk to suspend all open resting orders (including algo orders) immediately.
Q28	Please explain what you have done, and will continue to do, to ensure the integrity of the electronic trading system you provide for clients to use (including the system's reliability, security, capacity and contingency measures).
A28	Clients can access CBA algo via an independent 3rd party execution platform provider or via CBA Sales coverage. CBA's eFX support team constantly monitors its single execution venue with the liquidity pool created from multiple liquidity sources for reliability and performance, and the single execution venue is subject to regular stress testing.



TCA

TCA is an increasingly important part of the service. Where the TCA is not third party it is important to understand internal metrics. For example, if you have 'beaten risk transfer price' by 3bp how is that risk transfer price calculated?

Q29	Do you support any TCA or analytics? If so, please specify which providers.
A29	Yes. CBA will provide an internally generated TCA post trade.
Q30	If you provide proprietary analytics, please describe how relevant metrics are calculated (mid-price, risk-transfer benchmarks, etc.).
A30	TCA will reference the prevailing price from an aggregated market feed from third parties as the market benchmark, being the SGX FX composite price.
Q31	If you provide proprietary analytics, is there a difference in data provided to different users? If so, please elaborate.
A31	No

SWAPS

Algo Users may have a need to roll an algo execution entirely/partially to one or more forward value date/s. If roll forwards are executed with the Algo Provider, it is crucial to understand if the respective swap prices are competitive and whether potentially sensitive order information is exposed. For example, does the swaps trader know which side of the quote the algo execution is on or do they receive a two-sided RFQ? Also, does the swap trader know they are quoting a captive spot fill or does it appear the same as RFQs that are priced in competition with other banks?

Q32	What information is provided to the Short Term Interest Rate Trading (STIRT) desk when there is a request for swap pricing from an algo order?
A32	Not applicable since CBA support Spot algo only.

