



**FASTMATCH INC. ECN SERVICE
OPERATING PROCEDURES**

EFFECTIVE DATE: February 1st, 2016

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FASTMATCH INC. ECN SERVICE OPERATING PROCEDURES

1. ECN Service Summary

FastMatch Inc. (“FastMatch”) offers its users a global ECN Service from which to execute transactions in certain spot-settled foreign exchange and spot-settled precious metal products. The ECN Service operates three separate and distinct matching engines located in New York, London and Tokyo (located at data centers NY4, LD4 and TY3, respectively) (collectively, the “ECN Service”). Each matching engine emits its own market data, trades, and midpoint values. Users of the ECN Service should be aware of and comply with these FastMatch Inc. ECN Service Operating Procedures (as may be amended by FastMatch from time to time in its sole discretion, the “Operating Procedures”).

2. Hours of Operation

Trading hours for the ECN Service are from Sunday at 5:30 p.m. Eastern Time to Friday at 5:00 p.m. Eastern Time, with daily maintenance scheduled from 5:00 p.m. Eastern Time to 5:30 p.m. Eastern Time, during which time FIX sessions will be disconnected and the GUI will be inaccessible.

FastMatch’s support desk can be reached at +1 (212) 201-7319 or by email to ops@fastmatchfx.com from Sunday at 5:30 p.m. Eastern Time to Friday at 5:00 p.m. Eastern Time.

3. Access Methods

API Access

Users that access the ECN Service by way of application program interface (“API”) provided by FastMatch will also need to complete certification to the API in order to receive production credentials. Users that access the ECN Service using the API must (i) keep FastMatch fully informed at all times of the identity of each software program or system that directly or indirectly accesses the API and (ii) only provide such access to the API to those software programs and systems that have been previously approved by FastMatch in writing.

GUI Access

FastMatch GUI is an HTML 5.0 web-based institutional front end. Users may choose to transact on the FastMatch GUI on an anonymous or fully disclosed basis. The FastMatch GUI can be easily accessed using https protocol from common browsers such as Internet Explorer, Google Chrome, or Mozilla Firefox.

4. Data Dissemination Practices

FastMatch disseminates its market data via the FastMatch GUI, the Fastmatch website located at www.fastmatch.com (the “Website”), API, user download via web client portal and secure Amazon cloud. The table below shows the types of information provided via each market data distribution channel. Note that access to and use of each type of information below depends on a client’s FastMatch subscription and product usage. Clients will only have access to or use of such informatino in accordance with the client’s user agreement or other agreement with FastMatch.

TYPE OF INFORMATION	GUI	WEBSITE	API	WEB CLIENT PORTAL	AMAZON CLOUD
Real Time Trades for the entire FastMatch platform		X			
Real Time Best Bid/Offer for the entire FastMatch platform		X			
Real Time Trades for each matching engine of the ECN Service	X	X	X		
Historical Trades for the entire FastMatch platform				X	X
Real Time Best Bid/Offer for each matching engine of the ECN Service	X	X			
Historical Best Bid/Offer for the entire FastMatch platform					X
Tradable Bid/Offer specific to a client	X		X		
Real Time Midpoint for each matching engine of the ECN Service	X	X*	X		X

Table Definitions:

Real Time Trades for the entire FastMatch platform – All trades done across all matching engines (NY4, LD4 and TY3) in anonymized form. The trade information will include symbol, size, price, and match time.

Real Time Best Bid/Offer for the entire FastMatch platform – Anonymous aggregated Best Bid/Offer from all non-order-driven liquidity providers on the platform displayed in real time for all matching engines. Providers can contact FastMatch and request to be excluded from participation in this best Bid/Offer display.

Real Time Trades for each matching engine of the ECN Service – All trades done on a matching engine in one location (NY4, LD4 and TY3) in anonymized form. The trade information will include symbol, size, price, match time, and LP confirm time (for trades executed with external liquidity providers). Both sides of the trade (buy and sell) are reported as separate trades.



Historical Trades for the entire FastMatch platform - All trades done across all matching engines (NY4, LD4 and TY3). The trade information will include symbol, size, price, match time and anonymous numeric client identifier.

Real Time Best Bid/Offer for each matching engine of the ECN Service – Anonymous aggregated Best Bid/Offer from all non-order-driven liquidity providers on the platform displayed in real time. Providers can contact FastMatch and request to be excluded from participation in this best Bid/Offer display.

Historical Best Bid/Offer for the entire FastMatch platform – Anonymous aggregated Historical Bid/Offer from all non-order-driven liquidity providers on the platform.

Tradable Bid/Offer specific to a client – Anonymous Best Bids/Offer are displayed to every client. Only quotes will be displayed that a client can trade with.

Real Time Midpoint for each matching engine of the ECN Service – FastMatch calculates a midpoint from a real time Best Bid/Offer and publishes it in real time. If FastMatch markets are crossed, it uncrosses the market by removing the oldest crossing quotes. *On the Website, a midpoint for only the most active pairs is provided.

Every API client receives an anonymous numeric client identifier of the counterparty they are trading with as well as a contra settlement bank code. Liquidity Providers receive an anonymous numeric client identifier of the counterparty before the execution of orders from FastMatch.

5. Order Types

Please visit <http://www.fastmatch.com/features> for a complete description of order types supported by the ECN Service.

6. Liquidity Types

FastMatch utilizes two types of price liquidity, order driven liquidity and quote driven liquidity (quote driven liquidity is also known as “last look” liquidity). Order driven liquidity resides on the FastMatch book and is executed immediately upon arrival of the opposite side order. Quote driven “Last Look” liquidity is provided by liquidity providers and gives the liquidity provider the ability to see the order and choose to fill or reject the order, before execution. FastMatch prioritizes order driven liquidity over the quote driven liquidity at the same price. Furthermore, FastMatch’s “Flexible Matching” logic prioritizes order driven liquidity over quote driven liquidity in certain circumstances, even when the quote driven liquidity is a better price, if the execution quality of the quote driven liquidity is historically sub-optimal quality (please see more information about Flexible Matching rules at <http://www.fastmatch.com/features#matching-rules>).

FastMatch offers users a choice with regards to liquidity. By default, FastMatch users are configured to receive both order driven liquidity and quote driven liquidity. **Users can opt out from interacting with quote driven liquidity (for ALL currency pairs or for select currency pairs) by either contacting FastMatch support or via FastMatch FIX API.** However, users should note, a



majority of the FX OTC volume is executed via quote driven liquidity, opting out from such liquidity will likely result in wider spreads and less liquidity.

7. Market Protections

The ECN Service contains a mechanism designed to protect users against excessive quoting and other errors. Each user has an overall limit, as well as per currency limit (if applicable) on how many orders per second the user can transmit to the ECN Service. If a user exceeds that order limit, the ECN Service will not accept any further orders from that user for the remainder of that second.

The ECN Service also provides the following additional protections to users:

- Cancel on Disconnect – When a user’s connection to the ECN Service is broken, the ECN Service immediately and automatically cancels all active orders of that user. Users receive a ‘cancel’ confirmation messages once they have reconnected.
- Fat Finger Check – The ECN Service rejects orders exceeding 300 million.
- Pre-trade Open Position Check - Using the ECN Service’s CreditMatch application, Participating Financial Institutions (“PFI”), including those PFIs that serve as prime broker to other ECN Service users, may manage and monitor their own open positions with other PFIs, and the open positions their prime brokerage clients have entered into through the ECN Service. PFIs may also use CreditMatch to establish and manage trading limits for themselves or their prime brokerage clients. Trading limits are based on Net Daily Settlement Limit (“DSL NET”) and/or Net Open Position (“NOP”). CreditMatch automatically transmits an email alert to the relevant PFI when open positions reach 70% of the established DSL NET/NOP limit, 90% of established DSL NET/NOP limit and 100% of DSL NET/NOP limit. CreditMatch is configured to reject all orders that would breach 100% of either its DSL NET or NOP limits. The CreditMatch application is provided to PFIs and users upon request.
- Open Order Limit – The ECN Service will reject new orders if a user has more than 100 open orders for the same currency pair or precious metal at any given time.
- Disabling Quote Providers - FastMatch will automatically disable a quote (last look) provider and send an email if a provider takes more than maximum allowed response time.
- Off Market Transactions - The ECN Service is designed to prevent transactions that are off current market trading conditions. The ECN Service will not match two orders if matching them would result in a transaction priced at greater than the pip value listed at www.fastmatch.com/listings (reviewed from time to time) from the midpoint of the bid-ask spread (the “Protective Band”) for the relevant asset class at the time the transaction is executed. Every millisecond FastMatch calculates the midpoint based on the top of the relevant book of the ECN Service and publishes the most current midpoint. If the ECN Service receives an order outside of the Protective Band, the price of such order will be automatically adjusted to the most aggressive side of the Protective Band for matching and sorting purposes. To provide added market integrity and facilitating fair and orderly trading,



FastMatch will review transactions submitted to it pursuant to the Transaction Review Policy described below.

- Symmetrical Last Look - FastMatch requires all liquidity providers to use only a “Symmetrical Last Look” practice on the ECN Service. “Symmetrical Last Look” is the practice by which the same trade rejection logic is applied to all trades within the last look holding period, regardless of their P&L impact to the maker and / or taker. Trades rejected only when an order is unprofitable to the liquidity provider by the end of the last look holding period shall be considered to be the subject of “Asymmetrical Last Look” practice.

In order to prevent the use of Asymmetric Last Look on the platform, every calendar month, providers that receive and reject more than 30 orders from FastMatch, are subject to Asymmetrical Last Look check. FastMatch measures the P&L impact of every trade rejection and acceptance, in USD equivalent, by the last look liquidity providers using the FastMatch midpoint as a benchmark. FastMatch disseminates a real time midpoint calculation for every quoted currency pair on the ECN as outlined in paragraph 4 of this document. The P&L value is measured from the time that a trade order is sent from FastMatch to the last look liquidity provider to the time FastMatch receives a trade reject or trade acceptance from that provider. FastMatch measures the average and standard deviation on all accepted and all rejected trades from the provider for the calendar month. If the average P/L plus 3 standard deviations on all rejected trades result in a negative value, while the average P/L plus 3 standard deviations result in a positive P/L, then the liquidity provider will be considered to fail the Asymmetric Last Look check. When a liquidity provider fails the Asymmetric Last Look check, FastMatch will immediately notify the user in writing and offer a commercially reasonable amount of time to resolve the issue. If the “Asymmetrical Last Look” check is failed again the following calendar month, FastMatch will suspend such user’s account immediately, without further obligation or liability on the part of FastMatch until user can provide signed written assurances from its compliance officer that the issue was addressed.

Any FastMatch user applying “Asymmetrical Last Look” on the ECN Service shall indemnify, defend and hold harmless FastMatch and its officers, employees, agents, affiliates, successors and assigns from and against any and all damages, liabilities, losses, costs and expenses (including, but not limited to, reasonable attorneys’ fees) resulting from any claim, suit, action, investigation or proceeding brought against FastMatch as a result of such use of “Asymmetrical Last Look”.

8. Transaction Review Policy

FastMatch may review transactions pursuant to this Transaction Review Policy.

a. Transaction Reviews Initiated By Users



A user of the ECN Service may submit a request to FastMatch to review a transaction if (i) a user receives an execution of an order that it entered in error (*e.g.*, in terms of price or quantity), or (ii) a user believes its transaction was off-market (*i.e.*, outside of the Protective Band or off-market when compared to the relevant market generally). Each request will be considered on a case-by-case basis and in the sole discretion of FastMatch.

Users should submit requests to review a transaction by contacting FastMatch within 20 minutes of execution of such transaction at +1 (212) 201-7319 or support@fastmatchfx.com, and requesting that the transaction be reviewed pursuant to the Transaction Review Policy. Requests received after such time period may be reviewed depending on the facts and circumstances surrounding such request, however, FastMatch reserves the right to decline to review any request submitted more than 20 minutes after execution. Use of the ECN Service constitutes acceptance of FastMatch's right to modify or to cancel transactions in accordance with these Operating Procedures.

b. Transaction Reviews Initiated by FastMatch

If FastMatch determines in its sole discretion that circumstances warrant a review of a transaction, FastMatch may initiate a review of such transaction, regardless of whether or not a user has submitted a review request. In such instances, FastMatch will notify users that a transaction will be reviewed pursuant to the Transaction Review Policy. However, FastMatch is not under any obligation to review any transaction and shall not be liable for any failure to do so.

c. Reviewing and Adjudicating Transaction

FastMatch will use its good faith efforts to contact each of the users party to a transaction accepted for review by FastMatch ("Disputed Transaction"). FastMatch will review data reasonably available to it to determine where the "correct" price for an identical transaction was at the time of the Disputed Transaction. Data that FastMatch may consider includes, but is not limited to, pricing data from the ECN Service and any similar market, oral interviews with the parties to the Disputed Transaction, and market professionals not involved in the Disputed Transaction. FastMatch will use its good faith efforts to assist the parties to the Disputed Transaction to arrive at a resolution which is reasonably acceptable to those parties and to FastMatch. Possible resolutions include, but are not limited to, an adjustment of the rate or voiding the Disputed Transaction entirely.

FastMatch will use commercially reasonable efforts to preserve the anonymity of the parties to the Disputed Transaction from each other during the period in which it is attempting to assist those parties to arrive at a resolution.

In the event that after a reasonable period of time, the parties to the Disputed Transaction cannot agree on a resolution, or if FastMatch is unable to reach one or more of the parties to the Disputed Transaction during such period of time, FastMatch reserves the right to act unilaterally to void the Disputed Transaction or to modify one or more terms of the Disputed Transaction.



A final determination will be made by FastMatch in its sole discretion and will generally be made as soon as reasonably possible. FastMatch will promptly provide oral notification of a determination to the parties involved in a Disputed Transaction.

9. System Failure

In the event of a system failure, where the ECN Service experiences a service loss, open orders will be canceled, regardless of their TIF (time in force). Orders that were filled but not yet delivered will be considered filled. Please contact FastMatch regarding any questions.

10. Bona Fide Spot Transactions

The ECN Service permits certain bona fide spot foreign exchange and bullion transactions and does not permit transactions in swaps, as defined by the CFTC. Users must have the ability to effect physical delivery with respect to transactions occurring via the ECN Service; the transactions occurring on the ECN Service are not rolled as a matter of course; and any netting shall only be done in accordance with a pre-negotiated netting agreement.

The Operating Procedures shall become effective automatically on the Effective Date set forth above, without further notice.