

General Principles & Operating Guidelines
U.S. Treasuries (Ex. Treasury Bills)
November 2017

Introduction

ICAP Securities USA, LLC (“ICAP” or the “Firm”), as one of the world’s largest inter-dealer broker dealers, is committed to providing its customers with an efficient and sophisticated marketplace in which to transact. ICAP operates fully electronic, voice broking and/or hybrid networks to bring buyers and sellers together, facilitating price discovery and receiving a brokerage fee for resulting transactions. To this end, the Firm’s Hybrid Market Platform has evolved consistent with commercial trading practices and market conventions. This evolution has resulted in the establishment of a general operating framework for the Firm’s hybrid market. This framework is evidence of the Firm’s on-going commitment to its participants to provide an efficient execution platform while adhering to a high standard of ethical and professional conduct. This document describes the core elements of the Firm’s U.S. Treasury Hybrid (ex. Treasury Bills) business located in Jersey City, NJ, New York, NY, Chicago, IL and London, UK (collectively, the “Treasury Desk” or the “Desk”).

While this document describes the platform and its functionality, it is important to note that this is a dynamic trading platform and as such, it and its participants will continue to see refinements to its operation as the market and its participants demand. It is the responsibility of the Firm’s brokers and supervisors to understand and adhere to the spirit of the operating principles described within this document, as well as those outlined within the Firm’s compliance and supervisory manuals.

Generally, products handled on the Desk are negotiated and executed through electronic interactions and will generally follow the standard electronic protocols of the hybrid marketplace. However, the Desk may handle customer transactions in a variety of ways from time to time in order to best satisfy market needs. For example, (i) the Desk and its customers can enter orders directly into the externally viewable screen for execution, (ii) an order can be received by voice away from the externally viewable screen (e.g., via phone or instant message) and be executed on or off of an internal screen, and (iii) the Desk and its customers can transact through a Matching Session.¹

ICAP recognizes that the long-term viability of its marketplaces depend upon its customers’ confidence that the actual prioritization and satisfaction of their bids and offers occur in a manner that is efficient, fair and predictable, and that encourages continued participation in the marketplace.

¹ These Matching Sessions are described in more detail further on in the document.

General Operating Guidelines

In many markets, buy and sell orders at the same price are automatically matched. Thus, for example, a first order to buy an item at a price of 100 and a second order to sell the same item at a price of 100 will, in such markets, result in a transaction in which some quantity of the item is sold at a specified price.

But in some markets, most notably the secondary fixed income markets, orders of equal price are not automatically matched. Rather, certain types of buy and sell orders, called “passive” orders, may co-exist at the same price without triggering a transaction. These passive orders do not trade unless “aggressed” against by a trader submitting a second type of order, called an “aggressive” order. Historically, a passive order to buy has been referred to as a “bid”, while a passive order to sell has been referred to as an “offer.” By contrast, an aggressive order to sell has been referred to as “hit”, while an aggressive order to buy has been referred to as a “take.” Listed below are some other common references utilized when describing a buy or sell:

Buy	Sell
Take	Hit
Mine	Yours
Lift	Hit

Since it is impossible to generate liquidity in a market without having someone first make a price, inter-dealer brokers sought to encourage traders to submit bids and offers by developing a number of trading protocols or conventions which granted certain buyers and sellers certain trading options or “rights.” One such convention is commonly referred to as “workup.”

Right of First Refusal and Workup

ICAP generally operates pursuant to general market practices that address the “right of first refusal” and prioritization of customers coming to the market. These practices have been refined over time based upon expectations, preferences of the clients who participate in a particular marketplace and current market liquidity.

The concept of “right of first refusal” is common in many marketplaces. Customers that provide bids and offers to the marketplace are exposing themselves to execution at that price. In order to alleviate the concern of client preferential treatment, first bids and/or offers are given rights against any offers and/or bids that come in against their price for a certain timed interval regulated by the clearing clock. Once that time has passed, the bid/offer is open to other participants, when that bid/offer has a counter bid/offer the timed interval begins yet again until the “clearing timer” either runs out and is “cleared” back to Idle State, or the transaction enters into the next stage of the transaction process flow. Please note that each portion of the Transaction (Bid/Offer, Hit/Take &

Workup) all have been assigned pre-determined “clearing timers” through Issue Mod that apply for only the duration at which the transactions is handled on the screen and that the screen may not necessarily reflect the entirety of transactional activity occurring at any point in time. In addition, any on screen transactions can be terminated at any time, as indicated in these protocols and discussed more specifically under the section herein entitled Transaction Adjustments or Modifications. Participants who transact only on screen should understand that their rights and priorities on the screen attach to screen activity only and not to activity that takes place off screen. Off screen transactions, including the off screen portion of a transaction that started on screen, are not subject to automated rights or clearing timers.

A participant with on screen rights generally uses those rights to “work up” their transaction. In general terms, “workup” permits buyers and sellers to work up the size of a trade from the quantity traded as a result of an initial “hit” or “take.” Conceptually, a workup is considered a single deal extended in time. This concept was reflected historically in several aspects of workup trading. For example, because all trading during workup was considered a part of a single deal, all such trading occurred at a single price point set by the initial hit or lift that triggered the workup. In addition, the initial aggressor’s side of the market was designated the “aggressive” side of the market for the duration of the workup. Similarly, the opposite side of the market was designated the “passive” side of the market for the entire workup.

Desk Managers and Brokers are expected to utilize good judgment and discretion when making decisions on order handling. Decisions should be based on balancing and considering (i) the maintenance of an orderly market, (ii) following customer instructions, and (iii) accommodating competing customer interests and styles of trading. Decisions should be made without regard to the brokerage fee to be earned as a result thereof.

Client Facilitation

Although the nature of customer facilitation will vary across products, brokers should enter into trades only for the purpose of fulfilling/executing a client order where they have received a client order or a preceding tangible expression of client interest. A tangible expression of client interest involves some form of active engagement with the client. Absent some form of active client engagement that demonstrates and/or confirms client interest, a broker may not enter an order in anticipation of expected client interest and may not acquire a position with the intent to generate a client order. Client orders or preceding tangible expressions of client interest must be received or refreshed within the current trading day.

Generally, client facilitation may take place in the following circumstances:

Framing Markets

The aim of framing markets is to improve liquidity and transparency by expressing client interest to the market. In undertaking certain matched principal activities, ICAP provides electronic screens to its clients. ICAP may post on those screens live, executable bids and offers in agreed minimum marketable size in an effort to present spreads that are reflective of known market interest.

Framing will only take place where there is evidence of client orders or preceding tangible expressions of client interest, evidenced by an active engagement with the client. Examples include:

- Facilitation of a residual interest in a preceding Volume Matching Session – If a client enters an order in a Volume Matching Session and the session concludes with the client’s interest remaining unfilled (in whole or in part), ICAP may facilitate that residual interest for up to one hour after the conclusion of the Volume Matching Session. A broker may not extend the facilitation beyond one hour without contacting the client and refreshing the client’s interest.
- Facilitation of a residual interest in a preceding Workup – If a client enters an order that results in a Workup (described below) and the Workup concludes with the client’s interest remaining unfilled (in whole or in part), ICAP may facilitate that residual interest for up to one hour after the conclusion of the Workup. A broker may not extend the facilitation beyond one hour without contacting the client and refreshing the client’s interest.

Volume Differentials or Unmatched Balance

It is often the case that the volume of a financial instrument in which buyers or sellers are interested in transacting in does not match the level of interest of those willing to take the other side of the trade (the “Unmatched Balance”). In order to execute client bids or offers in this scenario, ICAP may acquire the Unmatched Balance resulting from the transaction, after taking into consideration the potential size of the mismatch, the liquidity of the underlying asset, and the Firm’s ability to liquidate the position.

Crossing Liquidity

It is often the case that a broker is able to source liquidity for a client across fungible markets (i.e., interest in an outright trade may be satisfied with one leg of a roll trade). In such situations, ICAP may acquire a position in connection with accessing liquidity across such fungible markets.

Accommodation Trades

In rare instances, a broker may determine that the quality of execution provided to a client was below that expected, and seek to provide the client with the benefit of

the aspired execution quality by taking part or all of the other side of the client's transaction. Such accommodations should occur rarely, and may be provided only with the prior approval of the broker's manager.

While there may be other types of client facilitation that would be permissible, brokers should not undertake such activities without prior consultation with the Americas Legal, Risk and Compliance Departments. If a broker has any doubt as to what constitutes active client engagement, he or she should consult with the Legal, Risk and Compliance Departments.

Risk Management of Unmatched Positions

To manage ICAP's risk from unmatched positions and to remove any incentive or opportunity for proprietary trading, the following limits and standards apply to all client facilitation activity:

Timely Liquidation/Hedging of Firm Positions

In the event that client facilitation results in unmatched positions for ICAP, it is expected that the positions will be liquidated and/or hedged as soon as is reasonably practicable. As a general matter, ICAP strongly discourages overnight house positions. In certain situations involving securities or financial products brokerage, it may become necessary for a broker to place an overnight order in an active issue to unwind a hedge or re-balance an existing long position. Any broker placing such an order must notify his/her desk manager, and the Risk and Compliance Departments before the end of business on the day the order is entered or as soon as possible the next business day.

Brokers should immediately place bids or offers into the market to liquidate any unmatched positions. Whenever there is an active market in the financial instrument, the broker must follow the order priority protocols of the relevant marketplace and generally be passive. Alternatively, the broker can also improve the price of the position to facilitate the liquidation, but should consider doing such transactions off screen if the price improvement could disrupt the market for the instrument. Because ICAP is not expected to be exposed to significant market risk, for less liquid products, ICAP may prioritize the liquidation or hedging of its own position over expressions of interest from clients. Further, while ICAP reserves the right without prior notice to depart from the typical order priority protocols in any and all situations, its normal interest and intent is to employ those practices on a regular and consistent basis.

Notwithstanding the foregoing, in no circumstances may a broker liquidate a Firm position in contravention of any applicable rules regarding front running or best execution.

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Because ICAP's policy prohibits position taking and position management based on an expected view of market movements, and because a number of policies limit the amount of risk that may be taken in connection with client facilitation activities, proper client facilitation activities should not generate large gains or losses due to market movements either on a per trade basis, or in the aggregate relative to the aggregate brokerage fees earned by a desk. A broker's goal then, with regard to unmatched positions resulting from client facilitation, is to avoid anything other than a modest gain or loss in order to liquidate the position as soon as reasonably practicable. A broker should not view the liquidation of an unmatched position as an opportunity to maximize profits for the desk. While it is acceptable in such a circumstance for the broker to take a spread out of a trade if such an opportunity is available, the broker should not acquire or manage unmatched positions with that objective. Whenever an Unmatched Balance results from this activity, the broker must liquidate the balance as soon as reasonably practicable and in accordance with the above section.

Strictly Prohibited Activities

In markets where ICAP maintains a screen to display either executable markets or indications, no Firm broker may conduct any transaction between two accounts in which one account purports to hit or lift another account's bid or offer with the intent that the transaction be disclosed or flashed to the market and then subsequently cancelled or voided ("flashing"). Firm brokers are further prohibited under any circumstances from engaging in any form of false communication or any type of activity that is or can be viewed as manipulative or misleading when dealing with customers or participating in market activity.

This prohibition is not limited to activity occurring on an electronic screen but extends to all dealings with market participants, including those conducted by voice or any other means.

The Firm deploys various resources in Risk, Compliance, Operations and Technology to detect instances of flashing. This activity, whether done electronically or verbally, is strictly prohibited and anyone engaging in such activity will be terminated from employment with ICAP.

Employees may not participate in any transaction for the purpose of artificially raising, depressing, or maintaining the price of a financial instrument with no other economic intent nor may employees participate in any transaction for the purpose of creating a false appearance of active trading in a security. Further, employees may not create or disseminate information to the marketplace regarding market activity, liquidity, volume and pricing levels without having a reasonable basis for believing such information to be

accurate. If an employee has any suspicion that a customer is engaged in conduct for a manipulative purpose, he or she should report the matter promptly to the desk supervisor and Legal and Compliance.

Price Discovery

In voice or hybrid brokered marketplaces, price discovery is generally done by voice over dedicated telephone lines and/or through electronic price dissemination screens and other electronic communication tools. In certain situations, ICAP will seek to find the other side to a transaction based on a firm request from a customer that specifies some or all of the trade parameters that the customer is interested in transacting in (e.g. price, counterparty credit, full or partial transaction size). In other situations, ICAP may be asked or expected to work a contingent order, whereby it is understood and expected that in facilitating the customer's transaction ICAP may adjust the contingent order to reflect changes in the price of, or shifts in the curves relating to, underlying instruments or indices with which the instrument(s) that is the subject of the order correlate.

Matching of Buyers and Sellers

ICAP does not take on any obligation to satisfy any customer's interest in whole or in part, regardless of the time, price, size or other terms of the customer's bid, offer or indication, and regardless of whether such bid, offer or indication could have been satisfied. For example, on many trades ICAP is necessarily working with multiple customers whose interests may be in conflict as to price and volume, and there may be more interest in a particular transaction than can be satisfied by the volume of interest on the other side of that transaction. It is thus frequently the case that the circumstances around a particular trade make ICAP unable to meet the interests of each of its customers to their full satisfaction. Subject to applicable Regulatory Requirements, ICAP reserves the right in its discretion to determine how to prioritize allocations of executions. Desk Managers and Brokers are expected to utilize good judgment and discretion when making decisions on allocations. Decisions should be based on balancing and considering (i) the maintenance of an orderly market, (ii) following customer instructions, and (iii) accommodating competing customer interests and styles of trading.

Hybrid Platform Guidelines

The hybrid platform has been developed by industry professionals in the inter-dealer market space. Trading conventions, rules, protocols and practices have been developed based on operating fair and balanced marketplaces. The ICAP Hybrid Market Platform, consists of a stand-alone Java based front-end module which is loaded on each user's desktop. Front-end features consist of:

- Real-time Market Data pages
- View-only with broker execution or live trader execution
- Clearing and trade notifications
- Order book window reflective of active and suspended orders
- Trade books reflective of both broker-executed and trader-executed trades
- User-defined custom pages with trading window
- Consolidated trade execution window

The screenshot displays the 'UST LIVE SEL' window with a grid of market data. The grid is organized into columns for Description, BidAmt, Bid, Offer, OfrAmt, and LTP. It lists various Treasury securities such as S_3_YR, F_5_YR, T_7_YR, and T_10_YR. Each row includes a description, bid amount, bid price, offer price, offer amount, and last traded price (LTP). The interface also features a navigation bar at the bottom with tabs for different market segments like TIPS, TIPS_SWAPS, and 30YR_OTR.

Description	BidAmt	Bid	Offer	OfrAmt	LTP
S_3_YR	20	102.076	102.08	10	
1 3/8 3/13	10	103.07	103.08		
1 3/8 4/13	10	102.092	102.11		
1 3/8 5/13	100	101.21+	101.216	20	H 101.216
1 1/8 5/13	10	101.11+	101.116	10	H 101.116
1 7/13	10	107.20	107.17		
3 1/8 9/13	10	106.20	106.202	10	
2 3/4 0/13	10	104.122	104.136	18	
2 N/13	10	102.27+	102.28+		
1 1/2 D/13	10				
F_5_YR					
4 3/4 5/14	10	114.14+	114.15	10	T 114.14+
2 3/8 2/15	25	105.29	105.30	10	T 105.29+
2 1/2 3/15	20	106.156	106.17+	10	
2 1/2 4/15	106.11	106.16+	10	H 106.16+	
2 1/8 5/15	10	104.246	104.252	25	H 104.246
1 7/8 6/15	10	103.19+	103.202	10	H 103.202
1 3/4 7/15	20	102.306	102.31+	20	H 102.31
F_5_YR_ALT					
2 3/8 3/16	10	105.186	105.202	10	
2 5/8 4/16	10	106.262	106.28	10	
3 1/4 5/16	109.19+	110.086	10		
F_5_YR_ALL					
3 7/12	1	106.23	106.22+		

(Sample Hybrid Screen)

Customers can view, enter, update and cancel real-time price information on the front-end system. In order to draw attention to new prices entering the market, the platform highlights these prices on the market screens.

In addition, prices entered by both brokers and traders can be highlighted to reflect ownership and trades are highlighted to reflect traded price, traded amounts and additional amounts available to the market.

Description	BidAmt	Bid	Offer	OfrAmt	LTP
226/826	5	P 1.0	G 0.8	5	
826/N26	5	G 2.6	P 2.9	5	
N26/227	5	G 1.6	P 1.8	5	
N27/828	5	P 6.8	P 8.8		
828/N28	5	G 2.3	P 2.5	5	
N28/229	5	G 1.8	P 2.3	5	
530/231	5	G 6.6	P 6.7	5	TP 6.7
231/236	5	G 21.5	P 22.6	5	TP 22.0
236/237	5	G 0.2	P 0.3	5	
236/537	5	P 1.0	G 0.8	5	TG 0.9
537/238	5	G 5.6	P 5.6	5	
238/538	5	P 0.4	G 0.3	5	HP 0.3
238/539	5	P 0.7	G 0.6	5	
839/240	5	G 0.3	P 0.8	5	
N39/540	5	G 0.2	P 0.3	5	
240/540	5	G 0.7	P 0.9	5	
30YR ROLL	200	P 0.25	0.0	200	
30_YEAR_PA					
z226	13	39.0	39.0	5	H 39.0
z826	5	48.+	49.0	5	
zN26	5	57.+	58.+	5	
z227	5	57.+	65.+		
4 3/8 540	20	111.28	111.28+	15	H 111.28
6 1/4 530	5	141.22	141.24		
5 3/8 231	5	128.30	128.31		T 128.31
4 3/4 237	5	119.02	119.06		
5 537	5	123.22+	123.24		
3 1/2 239		96.11	96.11+ TAK	5 5	T 96.11+
4 1/4 539	10	109.19	109.19+	5	

(Sample screen during a trade)

In order to understand the fundamental market information displayed on the platform, let's zoom into this particular trade. The area highlighted in red is the traded price and the direction of the trade. For an offer to sell that has been executed, the industry speak/jargon is that the price was "taken" and the screen reflects this action with "TAK". For a bid to buy that was executed, the industry speak/jargon is that the bid was hit and the screen would display "HIT".

The next detail reflects the amount that has been traded and the amount that either the buyer or seller has posted to buy on or sell on. In this example, the **5** indicates that 5 Million notional amount has been traded and the **5** indicates that the buyer has posted to buy an additional 5 Million.

If there was an amount that the seller had posted to sell, the background would be green instead of blue. This method of reporting what has taken place and simultaneously reporting what additional amount could take place is the hallmark of inter-dealer broking and the system's matching engine has been optimized to reflect specific nuances of each market for which it is used.

Description	BidAmt	Bid	Offer	OfrAmt	LTP
4 3/8 540	20	111.28	111.28+	15	H 111.28
6 1/4 530	5	141.22	141.24		
5 3/8 231	5	128.30	128.31		T 128.31
4 3/4 237	5	119.02	119.06		
5 537	5	123.22+	123.24		
3 1/2 239		96.11	96.11+ TAK	5 5	T 96.11+
4 1/4 539	10	109.19	109.19+	5	

Issue Mod

Issue Mod is a function within the hybrid platform that controls the specific information of each instrument utilized by the platform. It can only be accessed through the application which is user and password protected. Each instrument must be set up in Issue Mod before it is eligible for trading within system. The Issue Mod settings include the specific clearing timers associated with that instrument, the stacking protocols utilized for that instrument, etc. These settings cannot be set up on a client by client basis. Below is an example of an Issue Mod screen.

The screenshot displays the 'GTN Issue Modification' web application. The browser address bar shows a URL with parameters for instrument ID and user ID. The page title is '(LIVE) GTN Issue Modification' with a version number 'v2_11_14'. The date is 'Fri 24 Sep 2010'. The main content area is titled 'Edit Issue Information' and shows the selected issue as 'CLON (13)' with instrument '83'. The interface is divided into several sections: 'Issue Information' (Market ID: US Treasury, Mrt Type: Swap, Category: 2_YEAR_SWAPS), 'Back Office Information' (Issue Type: 111, Desk: SHRT, Maturity: Apr-30-2012), 'Clearing & Display Formats' (Clearing Type: Swap, Price Format: in 32nds), 'More System Values ...' (On The Run: None, Swap Linkage: 2 Year Swap), 'Blink Time & Auto Work Down Timer' (Blink Time in seconds: Bid/Offer 20, Hit/Take 20, WorkUp 15, Auto_T 40), and 'System Options' (Basis Information, More Options, Stacking Policy, Order Back Policy). The 'System Options' section includes checkboxes for various settings like 'Hit/When', 'Reverse Video', 'No locked mkt', 'Desc.override', 'Ord. Amt limit', 'OddLots', 'Tck All', 'Cancel All Bids/Ofrs', 'Allow_Auto_Aggress', 'Prevent TMR', 'Fixing Private Phase', 'Fixing Public Phase', 'Reverse Buy/Sell', 'E_Flag', 'Prevent Depth', 'AON Instr', 'Prevent WorkUp', 'Aggress depth', 'B/O when capabl', 'Prevent Ord Joins', 'Anonymous E-Acct', 'Demarcation', 'Anonymous WrkUp', 'Allow Inverted Market', 'Prc Provider Trd PR', and 'Hidden Size Trd PR'. The 'Stacking Policy' section includes 'Stack Opt' (Volley) and 'Max Volley' (3). The 'Order Back Policy' section includes 'O/B Options' (Ord Back) and 'O/B Amt Rules' (Limit Amt). The page has 'Submit' and 'Reset' buttons at the bottom.

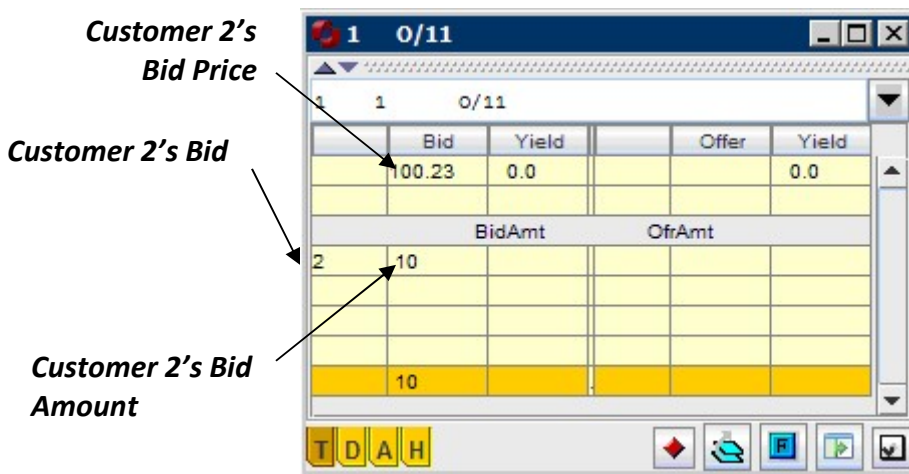
Brokers must be granted specific entitlements to access the Issue Mod functionality. Brokers can request entitlements via their direct managers or designees who then submit the entitlement request(s) to the Market Control Department. These requests must be pre-approved by Compliance and Senior Management. The Issue Mod settings can be changed by submitting a message to the Market Control Department. Issue Mod changes are visible to all market participants within the platform in real time and specific issue information may be given to clients upon request with the prior approval from a Firm desk supervisor and the Compliance Department. Changes within Issue Mod are captured in a log file and will be reviewed by the Compliance Department as part of the Annual Compliance Testing of supervisory controls.

Transaction Process Flow

(See Appendix A)

Idle State

The screen below reflects Idle State



(Figure 1)

Customer 2 has entered a bid but no counter offer has been entered yet.

Clients can enter quantities in a variety of ways. The following illustrate different viewing options clients can utilize when posting a bid or offer amount.

Entering Amounts

- **Default Amount:** Each Issue is defined within the system as having a minimum notional. That minimum is the default amount and will be displayed unless otherwise noted. (The minimum and maximum notional values vary by product and are available upon request.)
- **Increment Amount:** Each Issue is also defined with an Incremental Amount. This is the amount by which a client can increase his order after posting the initial bid/offer. (The Incremental amounts vary by product and are available upon request.)
- **Reserve Size (otherwise known as Iceberg):** This allows a client to enter an order for large size while only posting smaller quantities to the market. This strategy allows the client to book an entire order, gaining the convenience and assured participation, while only displaying a portion of the size. This is sometimes used to diffuse a sudden increase in interest or a large fluctuation in price.

- This option is defined by individual issue as well as by user.
- On issues NOT set up with Reserve Size, the total size will show on screen whether or not the client is set up to view Reserve Size.

Bid/Offer State

The screen below reflects the Bid/Offer State.

	Bid	Yield	Offer	Yield
1	100.23	0.0	100.24	0.0
BidAmt		OfAmt		
2	10		3	10
	10		10	

(Figure 2)

In this example, Customer #2 is willing to pay 100.23 for 10 Million and Customer #3 is willing to Sell 10 Million at 100.24. This is the Bid/Offer State. Once a "Hit" or "Take" action takes place, the instrument goes into Trade State.

Clearing Timers for Bid/Offer State

- Bid/Offer Timer:
 - The client(s) who enters the first passive bid/offer has a pre-determined period of time, regulated by the Bid/Offer timer, to **invoke** his/her right to refuse a counter bid/offer. The system is designed so that the client has a timed interval to act against, generally between 10 and 30 seconds. This timed interval may be different per product and is based upon market liquidity & market participants. (Clearing timer settings vary by product however specific settings are available upon request.)

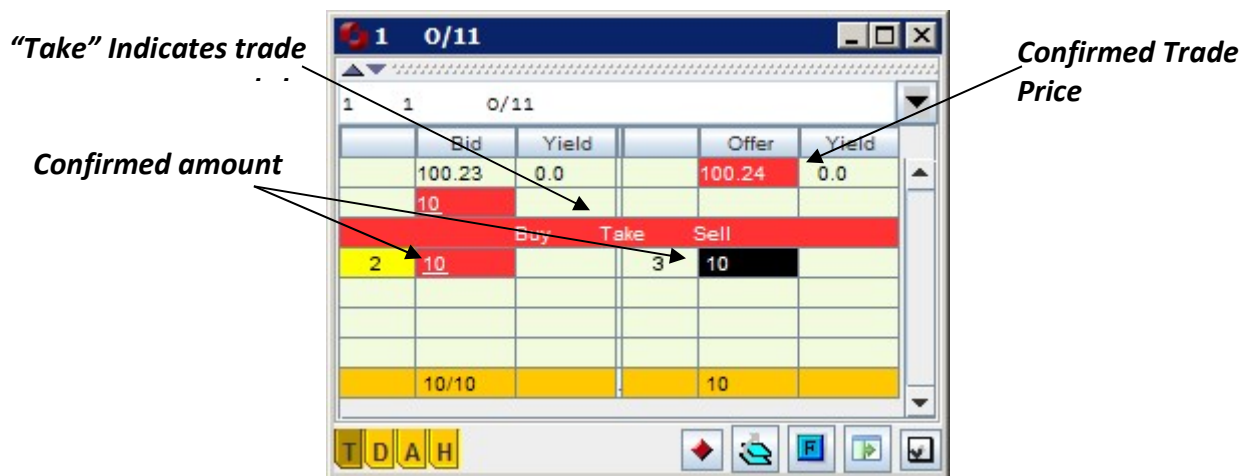
If the Bid/Offer timer runs out and the first participant has refused other participants bids or offers, the transaction is "cleared" and returns to Idle State until another aggressor posts a bid or offer. Once back in Idle State the market still allows the client to:

- Join the Bid
- Join the Offer
- Increase size of existing Bid
- Increase size of existing Offer
- Cancel existing Bid
- Cancel existing Offer
- Enter a better Bid
- Enter a better Offer

Trade State

Trade State begins when a bid and offer are aggressed upon, through to when Workup State is completed and the trade is executed.

The screen below reflects Trade State:



(Figure 3)

In this case, Customer #2 is buying, or "taking" 10 Million from #3 at the trade price of 100.24. Once an aggressor hits or takes a bid or offer, trade state moves into Workup State.

Clearing Timer for Trade State:

- Hit/Take Timer:
 - The client(s) who enters the first passive bid/offer has a pre-determined period of time, regulated by the Hit/Take timer, to **maintain** his/her right to refuse a counter bid/offer, generally between 10 and 30 seconds. This timed interval may be different per product based on market liquidity & market participants' preferences. The Hit/Take Timer was introduced in

order to give the passive participant time to communicate and react. The Workup Timer is generally shorter, assuming the passive participant is now engaged, allowing the trade to progress faster. (Clearing clocks vary by product, however specific settings are available upon request.)

- The Hit/Take Timer commences upon the occurrence of a hit or take and terminates upon: (1) the occurrence of a second trade execution, triggering the Workup Timer; or (2) the expiration of the non-extendable Hit/Take Timer.
- Hit When/Take When Timer:
 - If the first participants fail to maintain their rights of first refusal, those participants who have Hit When/Take actions pending, the system will act upon the current posted bid/offer in order of the time in which it was entered.

Workup State

Workup State begins when the 1 on 1 negotiation of trade size takes place.

Clearing Timer for Workup State:

- Workup Timer:
 - This timer refers to the negotiation of trade size or “volley” that takes place during execution and regulates the amount of time the participants have to add additional quantities to their posted bid or offer. Generally, each time new quantities are “matched” the Workup Timer begins again. Clients tend to post smaller amounts and “work up” to a larger total quantity within the same pricing level. This enables the negotiation process to be transparent to the market participants.
 - The Workup Timer is reset each time that a trade execution occurs during Workup State. The timer is either shared by both parties (See [Regular/Volley Stack](#) and [Zero Stack](#)) or each party is given an independent timer that resets when the opposite party enters a hit or take, allowing the other participant time to decide and react if wanted. (See [Zero2 Stack](#))
- Volley Count:
 - During a trade negotiation, participants will be granted 3 (adjustable) opportunities to increase their size before the system moves on to the next participant. This setting should be a setting that can be selected with any of the stacking systems. Participants are also able to select # of volleys.

- Example: Counter party responds to contra size three times, without meeting contra size request:
 - Seller 1 Offers 5M @ 100.00
 - Buyer 1 Takes the offering at 100.00 of 5M, and posts to by 100M
 - Seller 1 responds with 25M, then an additional 25M (50M), then an additional 25M (75M)
 - Since Seller 1 responded three times to the size requested by Buyer 1, and did not meet the size requested (100M) at that price point, Seller 1 will be marked completed in the trade, and give up any exclusive rights to respond.

The screen below reflects Workup State:

Customer #2 posts to buy an additional 20 Million. We reflect this in the second column and refer to this as the “posted” amount. This amount is not yet completed, but the market participants are aware that the buyer would take an additional 20 Million.

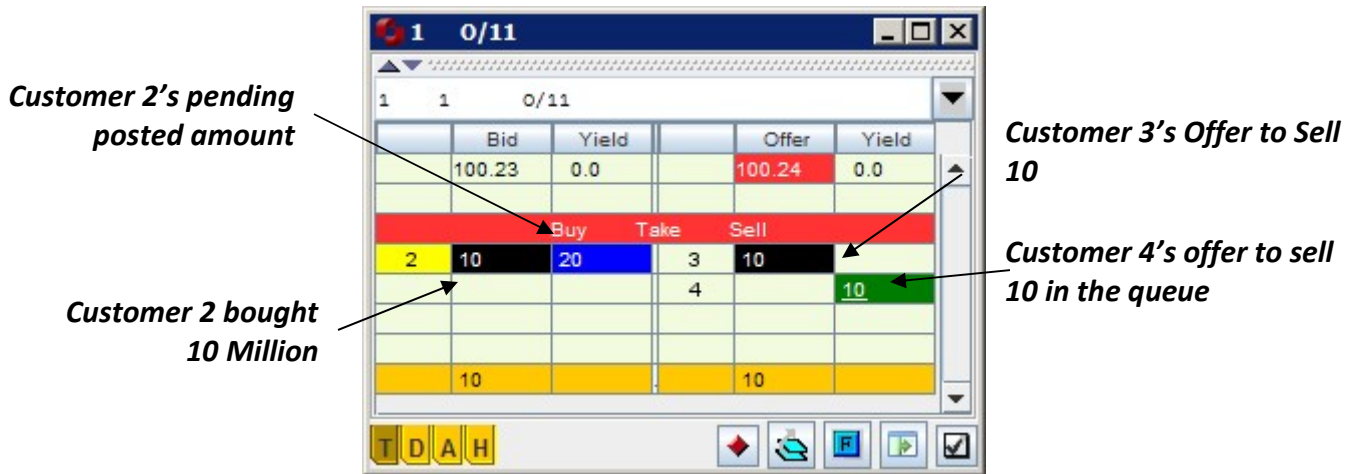
Customer 2’s additional posted amount

1 0/11		Bid	Yield	Offer	Yield
1	1	100.23	0.0	100.24	0.0
		10			
		Buy	Take	Sell	
2	10	20	3	10	
		10/10		10	

(Figure 4)

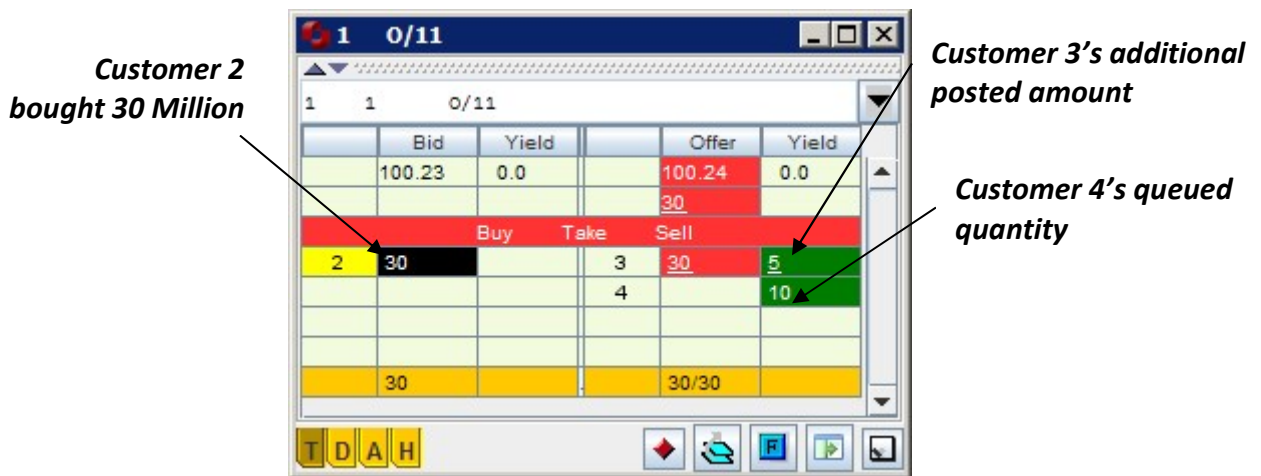
Customer #3 has a pre-determined period of time, which is controlled by an internal “Clearing Timer” to decide to sell an additional amount, and to work-up from the original size of 10 Million to the 30 Million that Customer #2 has posted a desire to buy.

During the time that Customer #2 is waiting for a response from #3, Customer #4 posts to sell 10 Million (“Hit/When”), but due to Customer #3’s Right of First Refusal and Stacking Protocols, Customer #4 is placed in a queue to sell after Customer #3 either gives up his right of refusal or other buyers come to market which would take an amount greater than #3 is willing to sell.



(Figure 5)

Customer #3 responds by posting to sell 35 Million, filling the additional 20 Million requested by Customer #2, and posting to sell an additional 5 Million. Customer #4 still remains in the queue to sell and all market participants are still aware of the activity.



(Figure 6)

At this point, Customer #2 has posted to buy 45 Million. Customer #3 can increase his amount and continue to fill Customer #2, or do nothing and give up any additional trading rights. In this example, Customer #3 sells a total of 35 Million and Customer #4 sells 10 Million. As you can see, the original trade of 10 Million between Customers #2 and #3 resulted in a completed trade of 45 Million between Customers #2, #3 and #4. It was because of the OTC model of work-up developed to serve the wholesale markets that additional liquidity was shown to the market and ultimately resulted in a larger trade.



(Figure 7)

Stacking Protocols:

Stacking protocols are computer controlled pre-determined procedures that define the conditions in which participants are placed in queue and the conditions in which they may or may not gain rights. There are currently four (4) stacking protocols available for use within the hybrid platform. The stacking protocols are determined and established by market participants as common market place convention and may change based upon market interest, liquidity and speed of transaction flow. The process to change a stacking protocol includes a survey of market participants and is carefully decided.

If two identical orders for the same issue come to a broker, one electronically and one via telephone, they are generally entered into the system in order of receipt. The broker receiving the voice instruction seeks to enter that instruction into the system as soon as possible, but participants should recognize that because of the need for manual input, electronic instructions may tend to receive priority over contemporaneous voice instructions. Once entered into the system they are not treated differently - they follow the same stacking protocols.

(See [Appendix B](#) for example scenarios)

1. Regular/Volley Stacking: (As illustrated in Figures 1 through 7 above)

General Rules:

- Regular Stack applies the Right of First Refusal to the 1st Passive & 1st Aggressor only. Subsequent participants are placed in queue until either of the original participants chooses to “opt out” of their rights or does not execute further within the clearing timer parameters.
- If the 1st Aggressor hits the entire bid, that “Aggressor” has the Right of First Refusal.
- Once given the Right of Refusal, the only way one can lose that right is to click “Out” within the system, react to a counter later than a clearing timer permits, or choose to not execute additional quantities.
- The Clearing Timer resets itself each time additional quantities are executed. Once the timer expires, it cannot be reset and additional participants are then able to enter the transaction.

2. Zero Stack:

General Rules:

- Zero Stack was developed for the Zero coupon bonds at the request of market participants to reflect the activity of the product.
- Zero Stack gives the Right of First Refusal to all initial participants.
- The Right of Refusal is first given to the 1st Aggressor and 1st Passive. Once either of the original participants chooses to not execute further quantities, by letting the clearing clock run out or by “opting out” of rights, the Right of First Refusal will then be passed down the stack to the next in the queue. The last buyers/sellers always have rights.
- The Hit/Take timer should only be on the **initial** Hit or Take. Any/all subsequent implementations of the clearing timer will use the workup timer.
- When a bid or offer is posted against the original buyer or seller, the Clearing Timer will start for **both** participants. If additional quantities are executed, the Clearing Timer will reset for **both** participants.

3. Zero2 Stack:

General Rules:

- This is an evolution to the Zero Stack protocol.
- The difference between Zero Stack and Zero2 Stack is that Zero2 provides timers for participants that are completely independent of one another. The Right of First Refusal is first given to the 1st Aggressor and 1st Passive participant. Once either of the original participants chooses to not execute further quantities, by letting the clearing clock run out or by “opting out” of rights, the Right of First

Refusal will then be passed down the stack to the next in the queue. The last buyers/sellers always have rights.

- The Hit/Take timer should only be on the **initial** Hit or Take. Any/all subsequent implementations of the clearing timer will use the workup timer.
- When a bid or offer is posted against the original buyer or seller, the Clearing Timer will start for **each** participant independently. If additional quantities are executed, the Clearing Timer will reset for the opposite side of the transaction allowing for time to decide and react.

○ Example:

Customer A Takes 5M from Customer D.	Customer D's Clearing timer resets giving him time to react if needed while Customer A's continues to count down.
--------------------------------------	---

4. 2nd Look:

General Rules:

- 2nd look stack would restart timer any time a posted amount comes into the market for the original aggressor and first bid/offer on the passive side. Unlike zero stack 2 where the last buyer/seller always has rights.

Correcting Queue Position

There are a number of reasons, set forth below, that may result in the computer controlled queuing mechanism not reflecting the precise trading activity that has occurred at one particular moment. As a result it may become necessary to reflect the trading rights of a particular request within the computer mechanism by correcting the stacking queue manually.

All queue amendments are visible to market participants in real time. (See [Figure 6](#) for illustration of queue visibility to market participants).

The ability to amend the queue requires approval of a specific entitlement level within the system by a desk manager or their appointed designee. Under the following conditions broker management may allow the correction of the stacking queue to take place.

1. **Error Transactions** - At times brokers or traders will enter bids or offers on the wrong account number or with the wrong price or quantity. To correct the error, the original bid or offer may need to be canceled and re-entered with the correct information. If additional customers had subsequently entered bids or offers, the corrected order may need to be adjusted to the appropriate position in the

stacking queue. All errors are captured on an error report and reviewed by the desk manager as part of their supervision.

2. **A resting bid or offer was not at the best bid or best offer price long enough to remain at the top of the queue** – Market protocol permits market participants to better bids and offers and then fall back to earlier top of market levels and then retain first in queue position at the new, inferior price level. If the better bid or offer is entered, and then subsequently moved back to the previous standing bid or offer price in a short period of time, market participants expect that the previous queue positions will be restored. The times that are deemed acceptable vary by product and are observed by market participants as well as ICAP supervisors. The times are based on the Firm’s experience operating in those markets and have been established based upon feedback from market participants.
3. **Market participant was not last buyer or seller entered into the system** – The last buyer or seller on an issue usually has the right to be first after a trade. Occasionally, as the result of a voice transaction, the most precise trading activity might not be captured electronically. In this case, the market participant expects the queue position to reflect the rights associated with the last buyer and seller to be honored and the position appropriately corrected.
4. **Market participant bid or offer does not meet minimum amount** – There is a minimum notional amount that needs to be met for a bid or offer to improve a price. Market protocol permits bids and offers to “join” an existing bid or offer, but not remain if the original bid or offer is cancelled. The practice also applies to unfilled balances of bids and offers that were executed, but which have left the last buyer or seller with amounts smaller than the round-lot size. If a customer was the last buyer and the balance of the bid or offer did not meet the minimum amount, then the broker may correct the queue to make that market participant first in the queue at the following bid or offer price.
5. **Technical issues with the trading system or network**– By design, if a market participant is disconnected from the trading system, their bids and offers are removed from the market. When the participant reconnects, or they ask the broker to re-enter the bid or offer, they would be placed in the proper queue position.
6. **Moving a market participant’s bid or offer from the participants electronic bid or offer book to a voice account number and vice-versa** – The hybrid model affords market participants the choice to enter bids and offers directly into the trading system or rely on a broker to do so on their behalf. In the event a broker steps off the desk and asks another broker to manage a bid or offer that was originally entered electronically by the market participant, that bid or offer is

designated a proper market participant voice account number. However, the queue position may need to be adjusted as a result of these events.

7. **Managing market participant orders that buy one issue to sell another, known as swaps**– The components of these swaps are referred to as the “legs” of the swap. When a broker is doing multiple trades at a time the broker sometimes is unable to get all of their order back into the market within the allotted 6 seconds of the stacking protocols. For some desks, there is a semi-automated feature that links the legs of swaps. These linkages represent the two parts of the swap and establish a “buy this if I sell that” order. In the event this re-link feature is engaged, and the potential contingent leg of the swap is re-entered, the queue may need to be corrected to reset the appropriate leg of the swap.
8. **House bid/offer giving priority to customer – (See [Scenario 7](#) for an example) –** Where there is an active market in the financial instrument the broker should follow the protocols of the U.S. Treasury Desk and generally be passive. In some cases a broker may choose to adjust the queue in order to give priority to a client bid or offer over the house activity.

Post Trade State

Other Timers:

- Auto Takedown Timer:
 - The Broker can “take down” or remove the trade from the screen anytime after the trade is complete. Otherwise the trades will flash on the screen for a set period of time (generally around 45 seconds) before the system automatically removes the trade from the screen. The trade is then reviewed by the Broker and “checked out” of the screen into the trade book.

Order Back Protocols:

- Order Back: The original price is re-entered after trade is completed or taken down off the screen.
 - After a trade is executed, clients have the option to buy/sell a higher quantity. If a client has indicated such, the system will display the client’s bid/offer again for further possibility of execution. If the issue has a limit amount set for Order Back, this will restrict the amount that goes back into the screen after the trade. If no limit is selected, it does not restrict the size of the amount re-entered.

Bid Back Protocols:

- **Bid Back:** When a transaction is complete, participants in the stacking queue can “bid back” to the original bid. However, the last buyer or seller has 6 seconds to increase their size and regain rights.
 - Example: Customer #3 Bids back 10M
 - Customer #1 was the last buyer. They have 6 seconds to increase size and regain rights. If Customer #1 does not act, Customer #3 starts Bid/Offer state with Rights of First Refusal.

Volume Matching (“Matchings”)

Matchings are timed trading sessions where transactions occur at levels set by the Desk that are meant to maximize participation by buyers and sellers. The U.S. Treasury desks (“UST desks”) conduct Matchings throughout the day based on a set schedule.

Establishing the Level

The Desk uses best efforts to maintain a process to set levels for Matchings that is both consistent and predictable. The process varies for each product and maturity however, generally, if a market exists on the ETC screen, the desk will take the true mid-price of the market at the time of the Matching. Generally, a less liquid market requires more subjectivity. The Desk may use pricing runs submitted by customers via email or Bloomberg, may seek input regarding current market levels from a cross-section of customers, may consider prices on the ETC screen, and/or may consider other market information such as historical pricing when determining the Matching levels. Once the Desk has set a level for Matchings, the brokers on the Desk may communicate the level to their customers and solicit additional feedback however it is not the common practice of the UST desks.

The Desk reserves the right to move the levels initially communicated to customers as follows:

- The Desk reserves the right to move the level for Matchings based on customer feedback. When determining whether to exercise this right, the Desk may consider a variety of factors including, but not limited to the accuracy of prior feedback, market movements, and whether the feedback impacts the level of only one bond (as opposed to feedback regarding a suite of bonds).
- The Desk reserves the right to move the level, in its own discretion, in order to account for market movements and transactions done away from the Desk. This may occur if the Desk is made aware that the level is no longer reflective of the market (or the level was not initially reflective of the market). However, any single bid, offer, or 2-way quote may not necessarily change the level established

by the Desk. The Desk reserves the right to only update the screens when a bid or offer is better than the current levels on the screen.

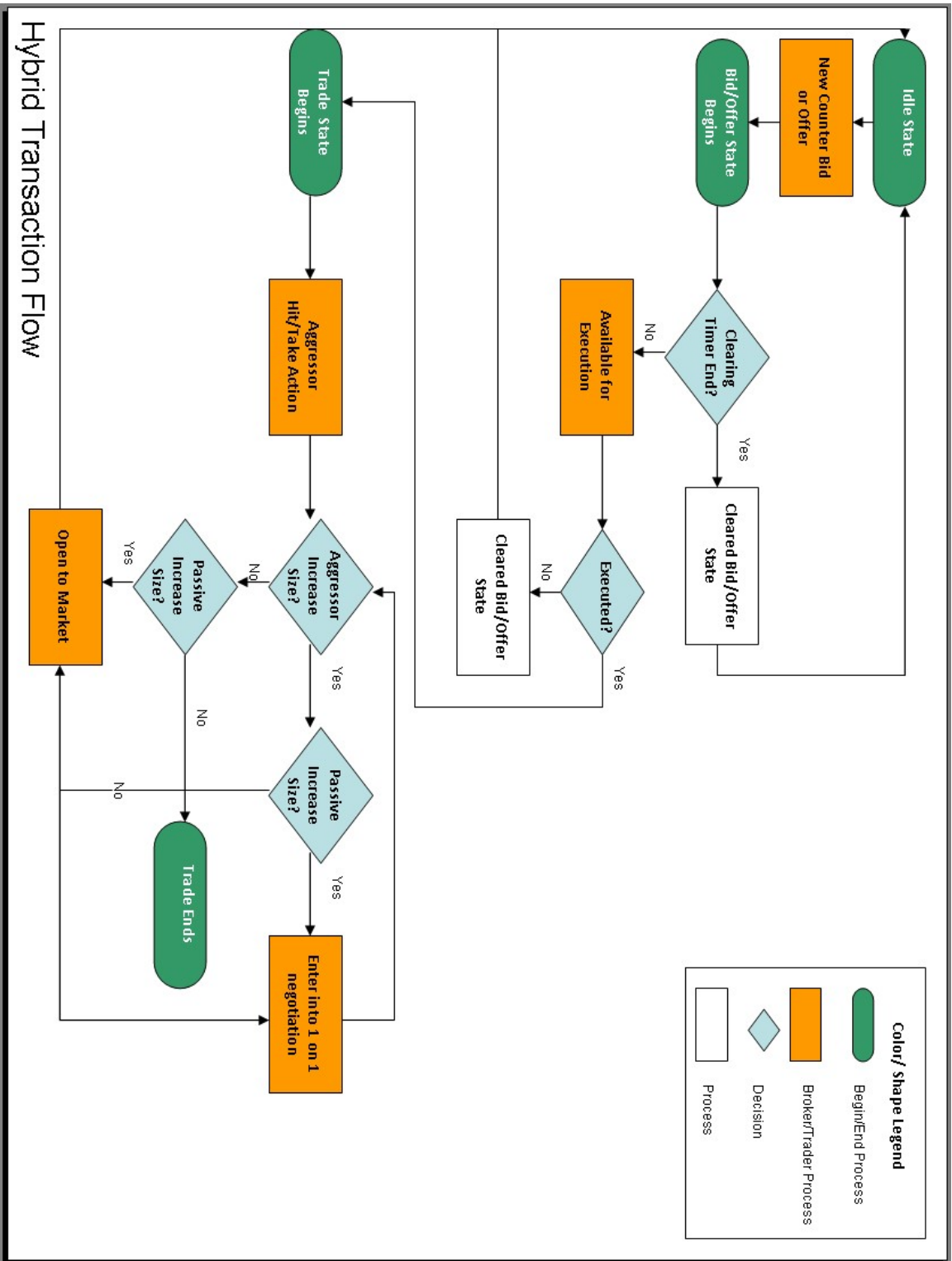
- Furthermore, the Desk reserves the right to recalculate levels in markets where prices, by the very nature of the markets being covered, can be episodic and non-continuous.

If a level is adjusted in the middle of a Matching session, the timer for that instrument will be restarted with a time determined by the Desk, generally for the full time or the remaining time, and any existing bids/offers will be cancelled.

Customers are shown the Matching price at the start of the auction, and may begin placing orders at that time. Customers will be able to see their own orders and intent, but are not able to see in what direction (buy or sell) there is interest at each price during the Matching. ICAP brokers are able to see order flow for voice customers only. Managers and/or designees are able to see order flow for all customers on the desk. Trades are executed based on time priority as buyers and sellers enter intent. There is no work-up protocol. Executed trades are either immediately displayed in the LTP column on the main ETC screen, displayed in red in the consolidated workup window, or at the end of the timed Matching, depending on the market. These will be noted as last volume at a specified price. During the Matching, customers are expected to input their own orders into the system; however, the capability exists for brokers to enter orders on behalf of customers into a customers' voice account. When the Matching ends, trades are displayed in the trader's trade books. The length of the Matching sessions and frequency at which they are held are set and run at the discretion of the market and the Desk.

Matchings are run concurrently to the regular ETC markets but are handled separately and do not interfere with the general stacking protocols.

Appendix A – Transaction Flow



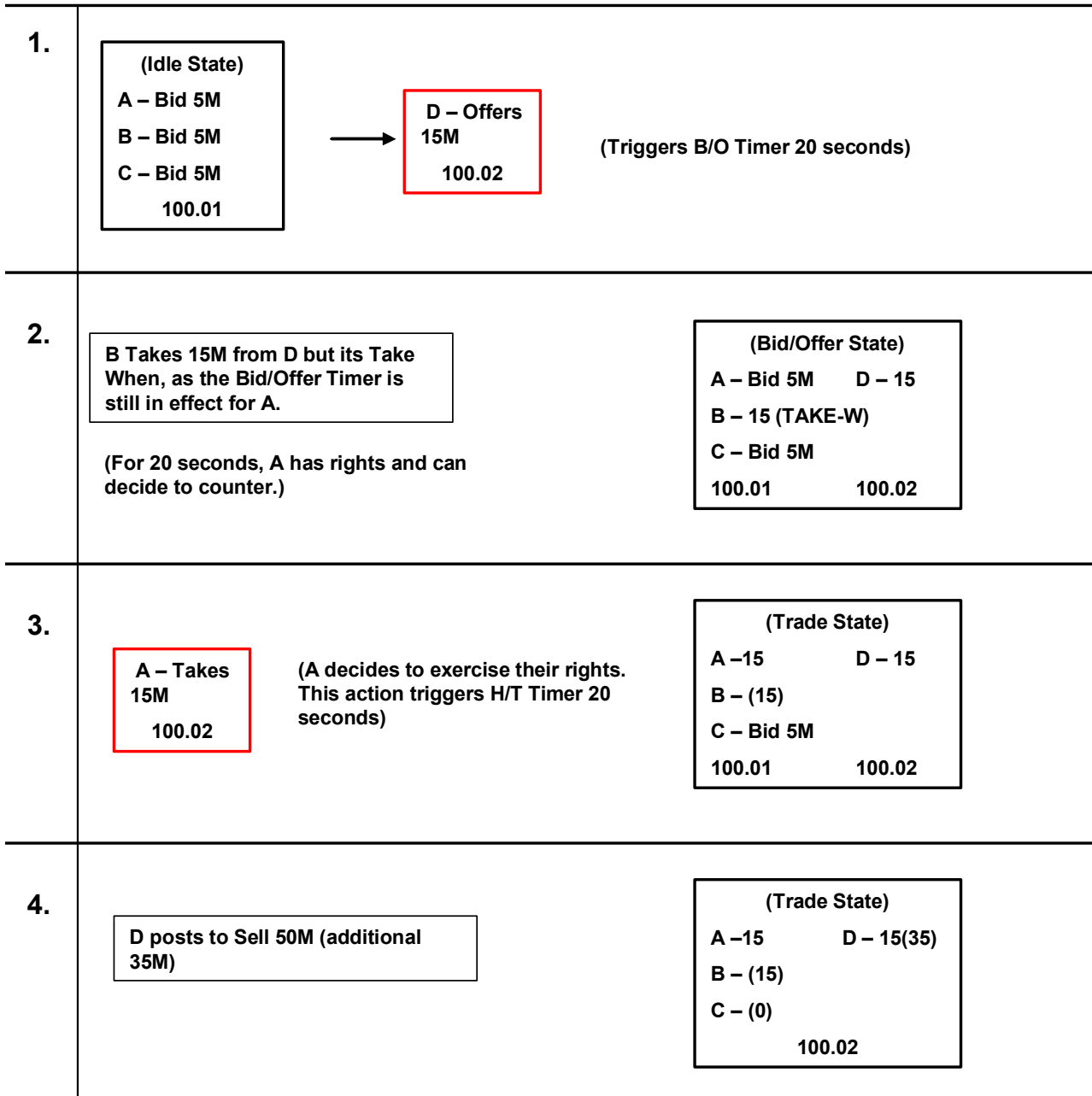
Hybrid Transaction Flow

Appendix B – Example Stacking Scenarios (1 through 7)

Scenario 1: Zero Stack

A,B,C bidding – D’s Offer to be cleared and ROFR given in time priority of bids at best price.

<p>Legend:</p> <p>Bid 5M – Customer Bid 5M</p> <p>5 – Customer Buys or Sells 5M</p> <p>(5) – Customer has 5M posted to buy or sell</p> <p>[5] – Customer is done with a total of 5M</p>	<p style="text-align: right;"><i>*Timer settings are for example only</i></p> <div style="display: flex; align-items: center; margin-bottom: 10px;"> <div style="border: 1px solid red; width: 20px; height: 10px; margin-right: 5px;"></div> Action triggering a clearing timer </div> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 20px; height: 10px; margin-right: 5px;"></div> Non-Timer triggering action taken </div>
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5.	<div data-bbox="279 319 440 499" style="border: 1px solid red; padding: 5px;"> <p>A – Takes 20M (an additional 5M) 100.02</p> </div> <p>(Volley Count = 1)</p>	<div data-bbox="984 306 1325 529" style="border: 1px solid black; padding: 5px;"> <p>(Trade State)</p> <p>A – 20 D – 20(30)</p> <p>B – (15)</p> <p>C – (0)</p> <p style="text-align: center;">100.02</p> </div>
6.	<div data-bbox="279 613 440 793" style="border: 1px solid red; padding: 5px;"> <p>A – Takes 25M (additional 5M) 100.02</p> </div> <p>(Volley Count = 2)</p>	<div data-bbox="984 600 1325 823" style="border: 1px solid black; padding: 5px;"> <p>(Trade State)</p> <p>A – 25 D – 25(25)</p> <p>B – (15)</p> <p>C – (0)</p> <p style="text-align: center;">100.02</p> </div>
7.	<div data-bbox="266 928 427 1108" style="border: 1px solid red; padding: 5px;"> <p>A – Takes 30M (additional 5M) 100.02</p> </div> <p>(Volley Count = 3 W/up Timer Starts 20 sec.)</p> <div data-bbox="451 1024 943 1188" style="border: 1px solid black; padding: 5px;"> <p>A used all 3 volley counts within 1 timer without filling D's full amount therefore yielding rights to B. B automatically gets filled on the 15M posted as D had 50M to sell. Workup begins between B and D.</p> </div>	<div data-bbox="984 928 1325 1150" style="border: 1px solid black; padding: 5px;"> <p>(Workup State)</p> <p>A – 30 D – 30 to A</p> <p>B – 15 15 to B</p> <p>C – (0) (5)</p> <p style="text-align: center;">100.02</p> </div>
8.	<div data-bbox="451 1323 915 1398" style="border: 1px solid black; padding: 5px;"> <p>Workup Timer runs out between B and D with no further actions taken.</p> </div>	<div data-bbox="971 1281 1312 1503" style="border: 1px solid black; padding: 5px;"> <p>(Workup State)</p> <p>A – [30] D – 45 (5)</p> <p>B – 15</p> <p>C – (0)</p> <p style="text-align: center;">100.02</p> </div>
9.	<div data-bbox="279 1617 440 1743" style="border: 1px solid red; padding: 5px;"> <p>D – re Offers 5M 100.02</p> </div> <div data-bbox="480 1608 902 1768" style="border: 1px solid black; padding: 5px;"> <p>Since B was the last buyer, B is moved to the top of the bid queue, and given 6 seconds to increase the size of the bid and keep his rights.</p> </div>	<div data-bbox="958 1608 1325 1831" style="border: 1px solid black; padding: 5px;"> <p>(Idle State)</p> <p>B – 5M D – Offer 5M</p> <p>A – Bid 5M</p> <p>C – Bid 5M</p> <p>100.01 100.02</p> </div>

Scenario 2: Zero Stack

A, B, C bidding – D offers, then Hits only partial amount

Legend:

**Timer settings are for example only*

Bid 5M – Customer Bid 5M

5 – Customer Buys or Sells 5M

(5) – Customer has 5M posted to buy or sell

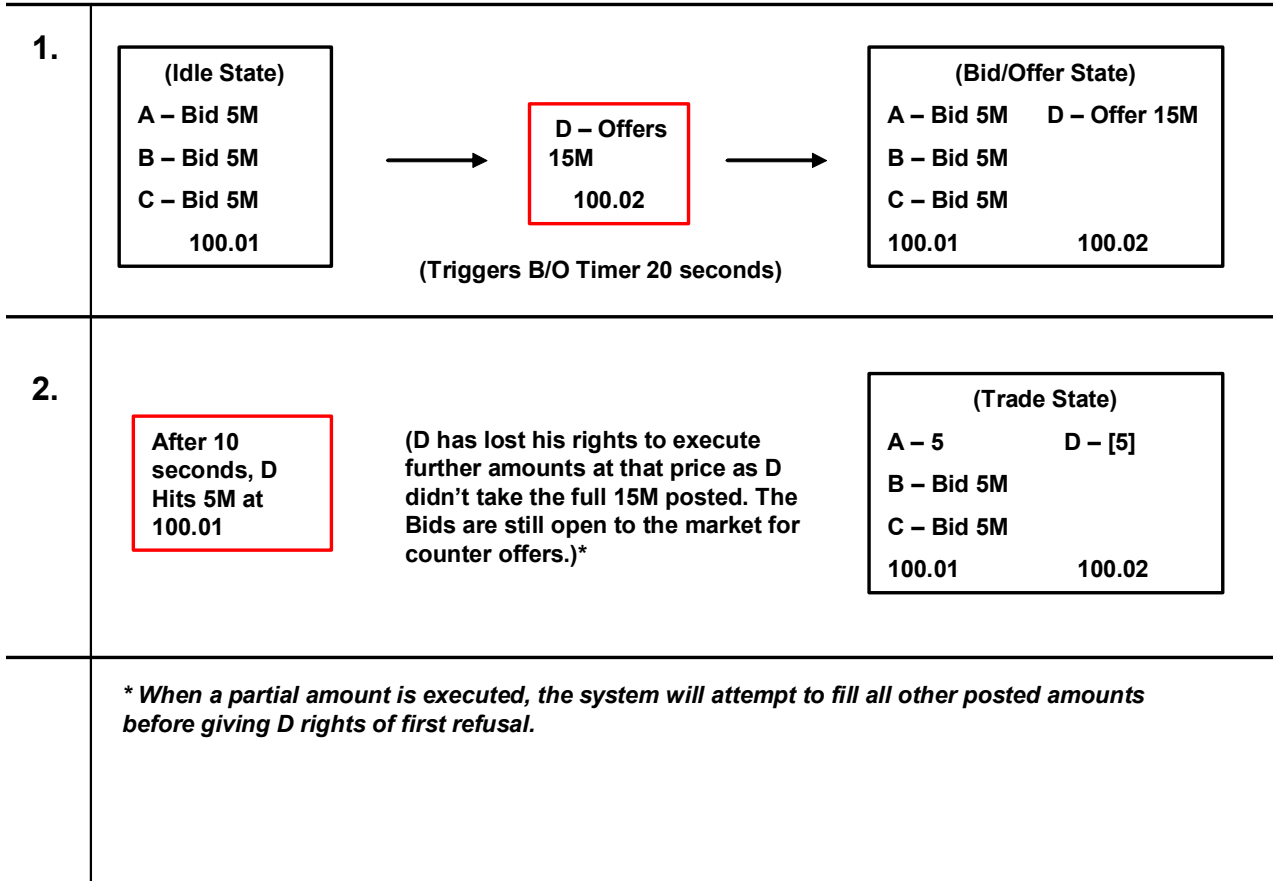
[5] – Customer is done with a total of 5M



Action triggering a clearing timer



Non-Timer triggering action taken



Scenario 3: Zero Stack

A,B,C bidding – D Offers, then Hits entire posted amount

Legend:

**Timer settings are for example only*

Bid 5M – Customer Bid 5M

5 – Customer Buys or Sells 5M

(5) – Customer has 5M posted to buy or sell

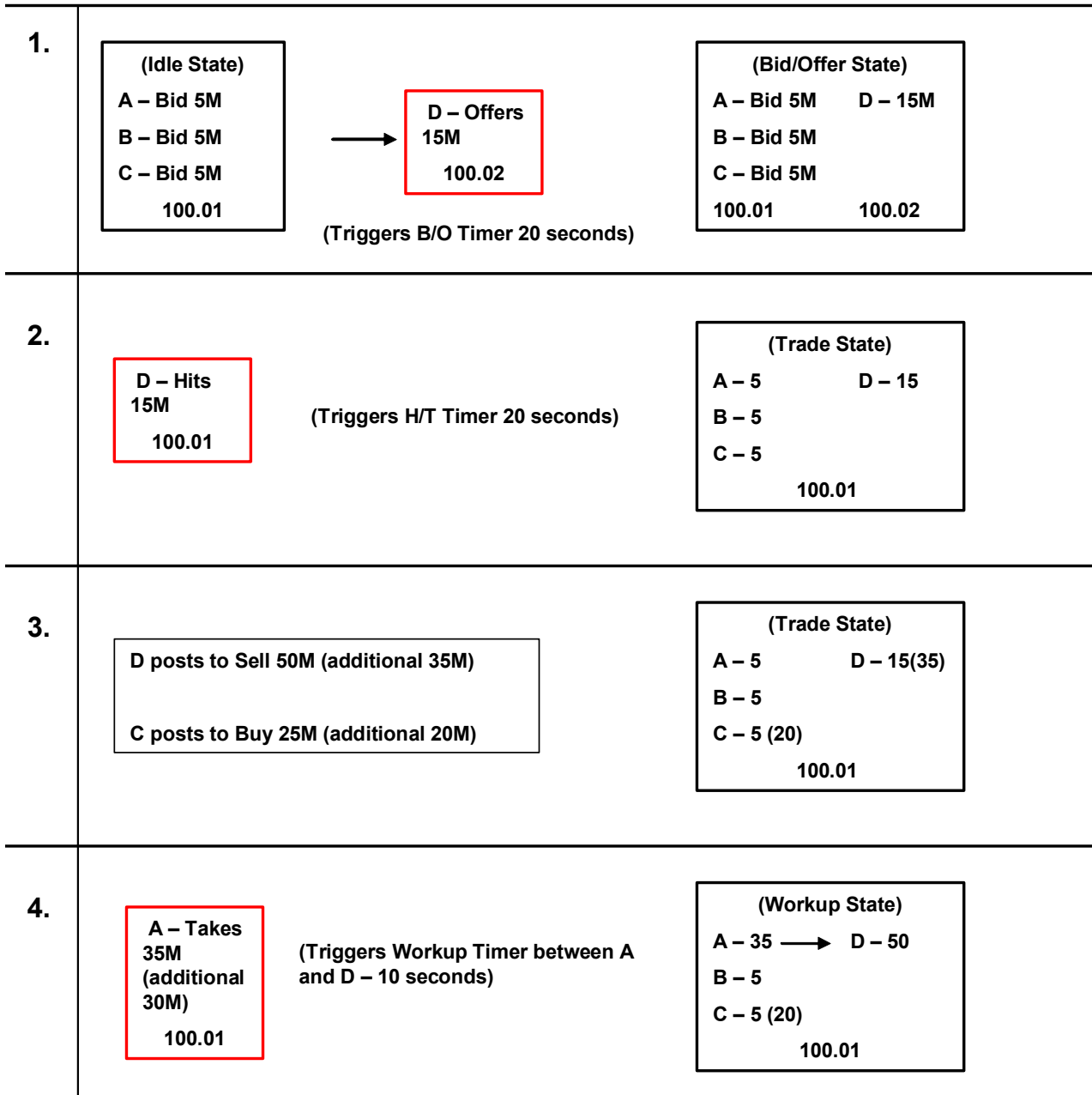
[5] – Customer is done with a total of 5M



Action triggering a clearing timer



Non-Timer triggering action taken



5.	<div data-bbox="367 407 859 453" style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> D posts to Sell 100M (additional 50M) </div>	<div data-bbox="1000 321 1312 541" style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">(Workup State)</p> A - 35 D - 50 (50) B - 5 C - 5 (20) <p style="text-align: center;">100.01</p> </div>
6.	<div data-bbox="354 646 915 821" style="border: 1px solid black; padding: 10px;"> <p>Workup Timer runs out between A and D with no further actions taken. A's rights then go to B who is next in the stack.</p> <p>Workup Timer between B and D starts for 10 seconds.</p> </div>	<div data-bbox="1000 632 1312 852" style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">(Workup State)</p> A - [35] D - 50 (50) B - 5 ↗ C - 5 (20) <p style="text-align: center;">100.01</p> </div>
7.	<div data-bbox="354 957 915 1157" style="border: 1px solid black; padding: 10px;"> <p>Workup Timer runs out between B and D with no further actions taken. B's rights then go to C who is next in the stack.</p> <p>Workup Timer between C and D starts for 10 seconds. C automatically gets filled on the 20M posted.</p> </div>	<div data-bbox="1000 957 1312 1178" style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">(Workup State)</p> A - [35] D - 70 (30) B - [5] ↗ C - 25 <p style="text-align: center;">100.01</p> </div>
8.	<div data-bbox="354 1335 915 1409" style="border: 1px solid black; padding: 10px;"> <p>Workup Timer runs out between C and D with no further actions taken.</p> </div>	<div data-bbox="1000 1293 1312 1514" style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">(Workup State)</p> A - [35] D - 70 (30) B - [5] C - [25] <p style="text-align: center;">100.01</p> </div>
9.	<div data-bbox="354 1629 513 1755" style="border: 2px solid red; padding: 10px; width: fit-content;"> D - re offers 5M <p style="text-align: center;">100.01</p> </div>	<div data-bbox="959 1619 1325 1755" style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">(Idle State)</p> D - Offer 5M <p style="text-align: center;">100.01</p> </div>

Scenario 4: Zero2 Stack

A, B bidding, D Offers greater then amount posted

Legend:

**Timer settings are for example only*

Bid 5M – Customer Bid 5M

5 – Customer Buys or Sells 5M

(5) – Customer has 5M posted to buy or sell

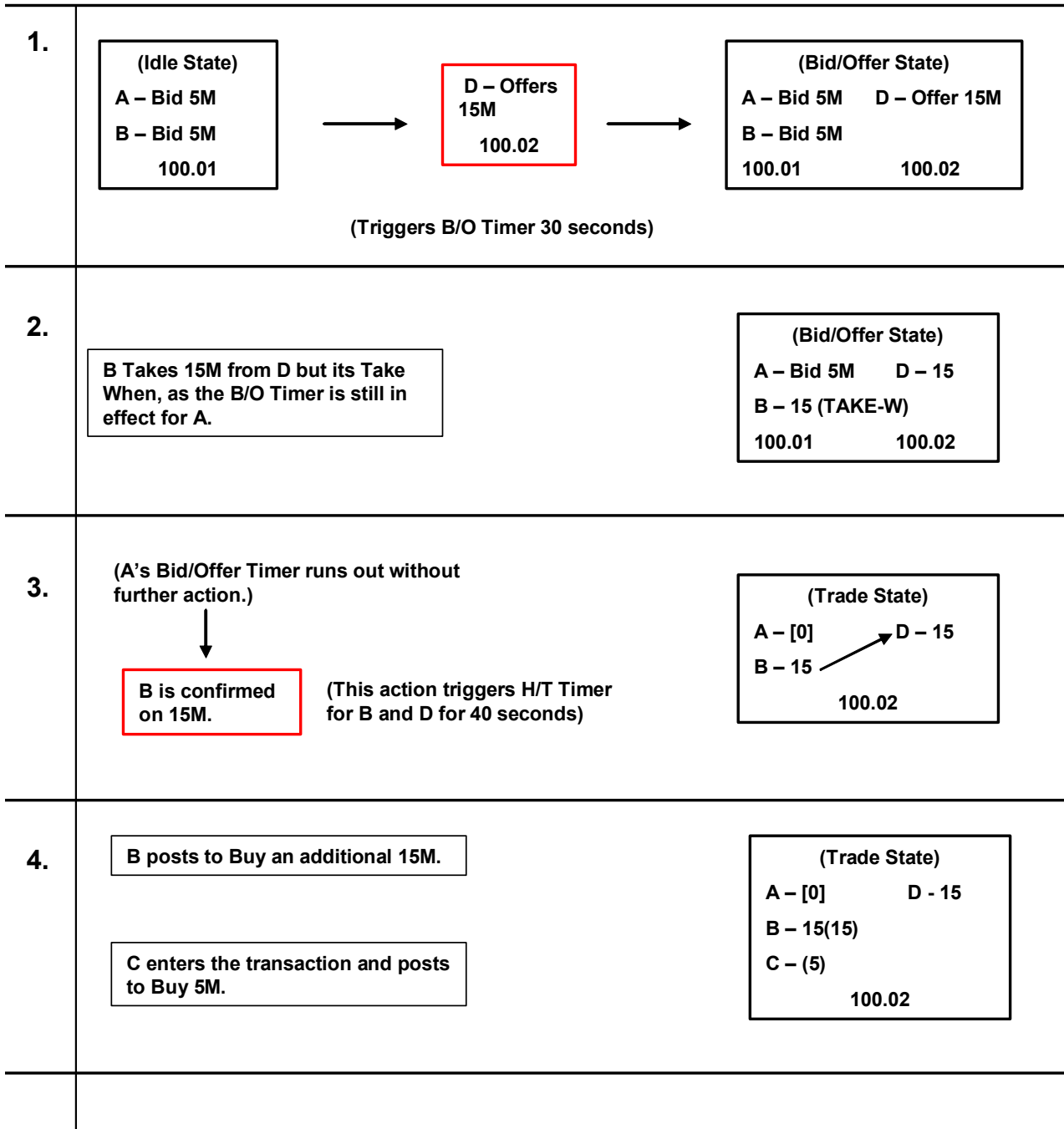
[5] – Customer is done with a total of 5M



Action triggering a clearing timer



Non-Timer triggering action taken



5.	<div data-bbox="282 373 482 552" style="border: 1px solid red; padding: 5px;"> <p>D – Posts to Sell 30M(an additional 15M) 100.02</p> </div> <p>(This triggers Workup Timer for both B and D for 20 seconds.)</p>	<div data-bbox="987 317 1325 537" style="border: 1px solid black; padding: 5px;"> <p>(Workup State)</p> <p>A – [0] D – 30</p> <p>B – 30 ↗</p> <p>C – (5)</p> <p style="text-align: right;">100.02</p> </div>
6.	<div data-bbox="282 667 522 772" style="border: 1px solid red; padding: 5px;"> <p>D – Posts to Sell 40M (additional 10M)</p> </div> <p>(D’s workup timer continues counting down, however B’s workup timer resets giving him more time to react to D’s post and increase his size if needed.)**</p>	<div data-bbox="987 615 1325 835" style="border: 1px solid black; padding: 5px;"> <p>(Workup State)</p> <p>A – [0] D – 30(10)</p> <p>B – 30</p> <p>C – (5)</p> <p style="text-align: right;">100.02</p> </div>
7.	<div data-bbox="282 940 776 1014" style="border: 1px solid black; padding: 5px;"> <p>B’s workup Timer runs out with no further action taken.</p> </div> <p style="text-align: center;">↓</p> <div data-bbox="282 1094 495 1199" style="border: 1px solid red; padding: 5px;"> <p>C – is confirmed on 5M</p> </div> <p>(This triggers Workup Timer for both C and D for 20 seconds.)</p>	<div data-bbox="987 940 1325 1161" style="border: 1px solid black; padding: 5px;"> <p>(Workup State)</p> <p>A – [0] D – 35(5)</p> <p>B – [30] ↗</p> <p>C – 5</p> <p style="text-align: right;">100.02</p> </div>
8.	<div data-bbox="282 1335 748 1409" style="border: 1px solid black; padding: 5px;"> <p>Workup Timer runs out between C and D with no further actions taken.</p> </div>	<div data-bbox="974 1293 1312 1514" style="border: 1px solid black; padding: 5px;"> <p>(Final State)</p> <p>A – [0] D – [35] (5)</p> <p>B – [30]</p> <p>C – [5]</p> <p style="text-align: right;">100.02</p> </div>
<p>** As B and D remain engaged in the transaction they will share a clearing timer related to their trading. Zero2 recognizes when new postings (D) join the transaction allowing the original participant (B) more time to increase size and retain rights as long as the new participants have posted amounts greater than B’s current posted amount. If they post an amount that is less than or equal to B’s current size, the timer will continue to count down normally.</p> <p>Example: Since D’s post equals (10) and B has nothing posted, B’s workup timer is reset in order to give him more time to increase size and retain his rights.</p>		

Scenario 5: Zero2 Stack

A Bidding, B Offers - multiple participants enter mid transaction

Legend:

**Timer settings are for example only*

Bid 5M – Customer Bid 5M

5 – Customer Buys or Sells 5M

(5) – Customer has 5M posted to buy or sell

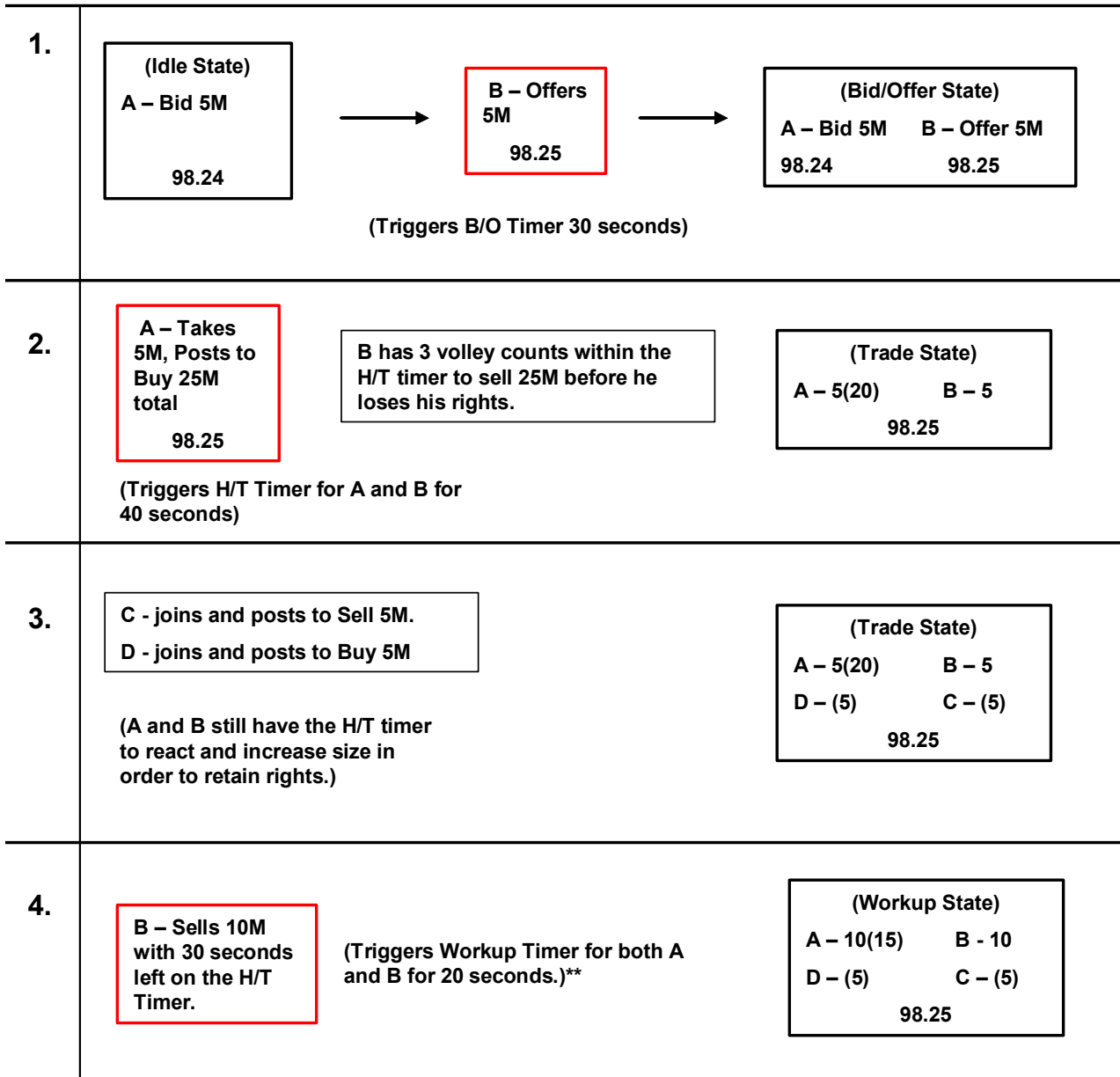
[5] – Customer is done with a total of 5M



Action triggering a clearing timer



Non-Timer triggering action taken



**** (If B had sold after the H/T timer reached 20 seconds, which is the workup timer setting for this example, the H/T timer would have continued to count down. Since B sold before the H/T timer reached 20 seconds, the workup timer was triggered as B was actively engaged and didn't need more time to react and decide.)**

<p>5.</p>	<div data-bbox="269 363 495 569" style="border: 1px solid red; padding: 5px;"> <p>B's workup Timer runs out with no further action taken. C- is confirmed on 5M</p> </div> <p>(This triggers Workup Timer to reset for both A and C for 20 seconds.)</p>	<div data-bbox="987 333 1325 510" style="border: 1px solid black; padding: 5px;"> <p>(Workup State)</p> <p>A - 15(10) B - [10] D - (5) C - 5 98.25</p> </div>
<p>6.</p>	<div data-bbox="256 657 508 806" style="border: 1px solid red; padding: 5px;"> <p>C - Posts additional 5M E - joins and posts to Sell 10M</p> </div> <p>(This triggers Workup Timer to reset for A only.)***</p>	<div data-bbox="987 632 1325 850" style="border: 1px solid black; padding: 5px;"> <p>(Workup State)</p> <p>A - 15(10) B - [10] D - (5) C - 5(5) E - (10) 98.25</p> </div>
<p>7.</p>	<div data-bbox="269 926 706 1003" style="border: 1px solid black; padding: 5px;"> <p>A's Workup Timer runs out with no action taken.</p> </div> <div data-bbox="269 1056 706 1129" style="border: 1px solid black; padding: 5px;"> <p>D's Workup Timer runs out with no action taken. Transaction Ends.</p> </div>	<div data-bbox="1000 955 1339 1173" style="border: 1px solid black; padding: 5px;"> <p>(Final State)</p> <p>A - [25] B - [10] D - [5] C - [10] E - [10] 98.25</p> </div>
<p>*** As A and C remain engaged in the transaction they will share a clearing timer related to their trading. Zero2 recognizes when new postings (C and E) join the transaction allowing the original participant (A) more time to increase size and retain rights as long as the new participants have posted amounts greater than A's current posted amount. If they post an amount that is less than or equal to A's current size, the timer will continue to count down normally.</p> <p>Example: Since C and E's combined posts equaled (15) and A's post equaled (10), A's workup timer is reset in order to give her more time to increase size and retain her rights.</p>		

Scenario 6: Second Look

B Offers, A Takes and posts additional amount

Legend:

**Timer settings are for example only*

Bid 5M – Customer Bid 5M

5 – Customer Buys or Sells 5M

(5) – Customer has 5M posted to buy or sell

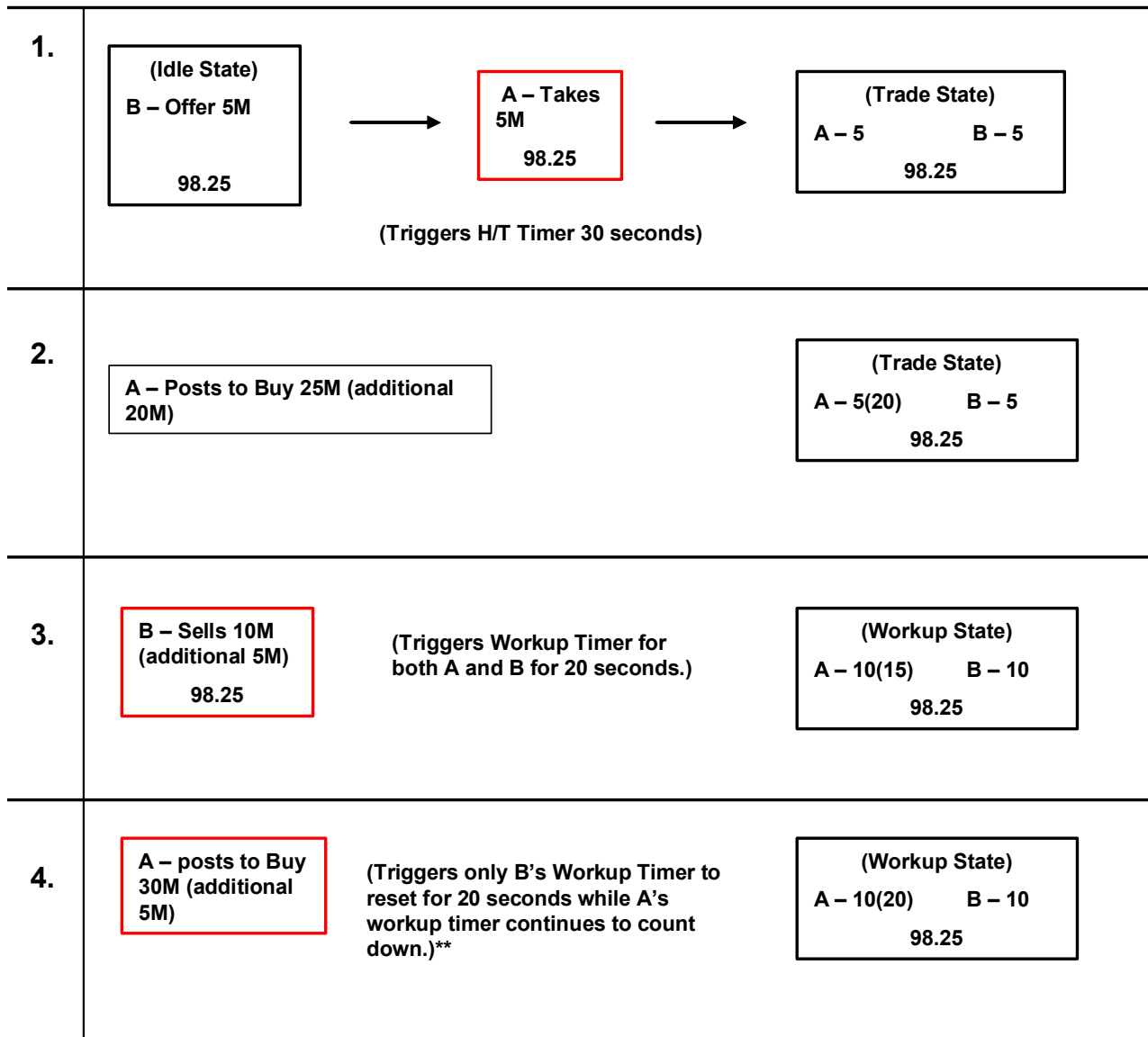
[5] – Customer is done with a total of 5M



Action triggering a clearing timer



Non-Timer triggering action taken



**** B’s workup timer is reset when A posts more to Buy giving B a “second look” and a chance to increase size and retain his rights. Second Look gives the Original Aggressor and Passive Participant time to react and retain rights before the transaction is open to the marketplace.**

5.

B's workup Timer runs out with no further action taken from A or B.

(Final State)

A - [10](20) B - [10]
98.25

Scenario 7: Regular/Volley Stack - Framing Markets

House Account (H) Framing Markets with a Bid and an Offer

Legend: **Timer settings are for example only*

Bid 5M – Customer Bid 5M

5 – Customer Buys or Sells 5M

(5) – Customer has 5M posted to buy or sell

[5] – Customer is done with a total of 5M

Action triggering a clearing timer

Non-Timer triggering action taken

1.	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;">(Bid/Offer State)</p> <p>H – Bid 5M H – Offer 5M</p> <p style="text-align: center;">98.24 98.25</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>In order to provide liquidity in the market place, An ICAP Broker posts a Bid and an Offer for 5M. The system will not fill a House Account with a Bid or Offer from another House Account.</p> </div>
2.	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 2px solid red; padding: 5px; width: 25%;"> <p>A – Takes 5M, posts to do 25M total **</p> <p style="text-align: center;">98.25</p> </div> <div style="text-align: center; width: 40%;"> <p>(Triggers H/T Timer 30 seconds)</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p style="text-align: center;">(Trade State)</p> <p>A – 5(20) H – [5]</p> <p style="text-align: center;">98.25</p> </div> </div>
3.	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 2px solid red; padding: 5px; width: 25%;"> <p>B - Posts to Sell 5M. B is automatically confirmed for 5M from A</p> <p>H – Posts to Buy 5M</p> </div> <div style="text-align: center; width: 40%;"> <p>(Triggers Workup Timer 20 seconds)</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p style="text-align: center;">(Workup State)</p> <p>A – 10(15) H – [5]</p> <p>H – (5) B – 5</p> <p style="text-align: center;">98.25</p> </div> </div>
4.	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 2px solid red; padding: 5px; width: 25%;"> <p>B Sells 20M (additional 15M)</p> </div> <div style="text-align: center; width: 40%;"> <p>(Triggers Workup Timer reset for 20 seconds.)</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p style="text-align: center;">(Workup State)</p> <p>A – 25 H – [5]</p> <p>H – (5) B – 20</p> <p style="text-align: center;">98.25</p> </div> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px; width: fit-content; margin-left: auto; margin-right: auto;"> <p>Note: ICAP remains Short 5M</p> </div>

**** If the House Seller, H, is taken, the House, H, can still sell up to twice the standard amount. In this case 10M. If H indicates that they are complete with 5M, then the second seller, B, would automatically Sell 5M as shown in #3.**

5.

A - posts to Buy 50M
(additional 25M)

(Workup Timer ends)***

*** Any additional size offered by
B will be shown to A first.

(Workup State)

A - 25(25)	H - [5]
H - (5)	B - [20]
98.25	

6.

After the timer ends and the Trade is complete, B calls his broker on the phone and says he would sell 5M more. Since A was posted to Buy more, the additional 5M gets shown to A either by a phone call from the broker, or B's additional 5M will get re-posted on the screen for A to act upon before the House Account gets to liquidate.

Appendix C – Glossary of Terms

Aggressor – The party who executes a bid or offer.

Bid – A term to reflect a price and/or amount or spread at which a customer is willing to buy. Bids are live, executable prices that reflect a market participant’s willingness to take risk.

Bid/Offer State – Refers to the state in which market participants are posting executable prices to buy or sell, but the prices have not matched or generated a trade. [\(See Figure 2\)](#)

Clearing – The nomenclature used in the OTC markets that reflect the right of first refusal awarded to market participants that have submitted top of market bids and/or offers. This process encourages market participants to post live, executable prices and in return, grant them an opportunity to consider counters in a timely manner.

Cleared – Means that no one executed their rights of first refusal and the bid or offer continues to be available to others in the marketplace leaving the participant in a Bid/Offer State.

Clearing Timers – ICAP’s trading systems have been developed to reflect the industry standards of clearing and have integrated these rules into computer-controlled timers that manage all clearing states. As these clearing rights are embedded in the bid/offer state as well as the trade state, there are a set of timers that control what a participant can do, based on the accepted industry practice (i.e. when participants move from a Bid/Offer State to a Hit/Take State, from a Hit/Take State to a Workup State, or from a Workup State to completion). The Clearing Timers include:

- [Bid/Offer Timer](#)
- [Hit/Take Timer](#)
- [Hit When/Take When Timer](#)
- [Workup Timer](#)

Commission – The fee that ICAP charges for matching buyers and sellers. These fees are known to the market participant prior to entering into a trade with ICAP.

Hit When and Take When – Refers to a market condition that results when a bid or offer is clearing to the resting market bid or offer, and a third party without the clearing rights enters a command to act on that price. In the “when” state, both the order to execute and the execute price are locked into a pending trade. If the standing bid or offer, in other words, the participant with clearing rights, acts before the clearing timer

expires, then that participant will execute the trade and the third party will be placed in the stacking queue.

Idle State – This reflects a state in the market when there are executable prices in the market that do not cross the bid to offer spread. Once a bid or offer has been acted upon, or aggressed, the transaction enters into Trade State. [\(See Figure 1\)](#)

Issue Mod – This is the application that is used to set up the various criteria or profile of the instruments in the GTN trading system. Issue Mod provides access to a wide variety of options for description, minimum volume increments, minimum price increments, clearing timers, price characteristics, etc. The Issue Mod screen is browser-based and can be accessed only by authorized users within the ICAP secure network.

Offer - A term to reflect a price and/or amount at which a customer is willing to sell.

Passive – The party that enters the resting bid or offer.

Right of first refusal – *See Clearing.*

Stacking - Stacking protocols define the conditions in which participants are placed in queue and the conditions in which they may or may not gain rights.

Trade State – The Trade State reflect the point of trade execution. In the OTC markets, activity is not on a continuous basis, but rather on an episodic basis. Brokers seek out executable bids and offers from market participants and these prices make up the typical bid/offer spread. Once a bid or offer is executed or aggressed upon, the market enters a trading state managed by industry standards and controlled by a computerized matching engine [\(See Figure 3\)](#).

Volley Count - During a trade negotiation, participants will be granted 3 (adjustable) opportunities to increase their size before the system moves on to the next participant.

Workup – Unique to the OTC wholesale markets, workup reflects the activity of building up the amount or size of a trade by broadcasting the trade activity and seeking an increase in the amount with from the initial trade participants, or by introducing additional participants to the trade. The workup ends when all buyer or sellers at the trade price are exhausted [\(See Figure 4\)](#).