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1. Introduction

This Nasdaq Dubai Trading manual describes the model of trading on the Nasdaq Dubai and the functionality of the Nasdaq Dubai trading platform. It addresses the order types and executions conditions available, the price determination rules for trading and the various trading phases on Nasdaq Dubai. It also addresses cancellation procedures, trading safeguards, and other trading conditions.

2. Trading

2.1 Trading Platform Interface

Currently Nasdaq Dubai has outsourced trading functions for its Securities to Dubai Financial Market (DFM) to be traded on the DFM X-Stream Trader Workstation.

DFM X-Stream Trader Workstation: The DFM X-Stream Trader Workstation is a Windows based application that must be installed on a PC with connectivity access to one of the trading distribution gateways (located in London or Dubai). The DFM X-Stream Trader Workstation gives full trading access to the DFM X-Stream trading platform and is fully equipped to support Members.

X-Stream Client Software Development Kit (SDK): The SDK contains the X-stream client Application Programming Interface (API). The SDK is used by Members of the Exchange to develop software that will connect to the X-stream server. Members can use the SDK to develop their own in-house trading application or alternatively can connect through one of our independent software vendors.

FIX Gateway: FIX gateway for DFM X-Stream trading platform is provided by and supports FIX protocol version 4.4. The systems FIX Gateway support the Members’ order management system.

2.2 Trading Model

The Nasdaq Dubai trading model comprises of two order books; the Central Order Book (COB) and the Off Order Book (OOB). The COB is the main order book into which orders are entered during the trading day. The OOB is a reporting service for reporting pre-negotiated deals and block trades between Nasdaq Dubai Members. Trades entered into the COB or Off Order Book are considered as On Exchange Transactions (they affect the market statistics on the trading day that they are entered).

2.3 Classifications of securities into Boards

Every Security belongs to an Instrument and every Instrument belongs to a Board. Securities that are traded on Nasdaq Dubai are categorized into Boards. Each Board has a particular trade parameter associated with it, the trade parameters indicate the type of orders that will be accepted as well as general rules and functions such as the trading schedule, trading hours, or tick and lot sizes, etc. Trade parameters for a board are configured by Nasdaq Dubai Exchange.
Board ‘200’ contains all the securities classified as Equity Products.

Instruments have a unique identifying code for the instruments that the securities are associated with. There is currently only one instrument that belongs to Board ‘200’, labeled NDORDS.

The Equity securities that are available for trading on the Nasdaq Dubai all belong to the NDORDS Instrument.

2.4 Market Timing and Trading Phases

Nasdaq Dubai market will be open for trading from Sunday to Thursday. A list of business holidays will be available on the Nasdaq Dubai website.

<table>
<thead>
<tr>
<th>Market Timings</th>
<th>Trading Phases</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:30 – 09:55</td>
<td>Pre opening auction</td>
</tr>
<tr>
<td>09:55 – 10:00</td>
<td>Preopening adjustment (No Cancellation period)</td>
</tr>
<tr>
<td>10:00 – 13:45</td>
<td>Continuous trading</td>
</tr>
<tr>
<td>13:45 – 13:53</td>
<td>Pre-closing Auction</td>
</tr>
<tr>
<td>13:53 – 13:55</td>
<td>Pre-closing Adjustment</td>
</tr>
<tr>
<td>13:55:20 – 14:00:20</td>
<td>Trading-At- Last</td>
</tr>
<tr>
<td>From 14:00:20</td>
<td>Post-trading (close)</td>
</tr>
</tbody>
</table>

Any change in market timings or trading phases will be notified to Members by a way of a notice.

**Pre-opening Auction**

- The pre-opening auction will be an order accumulation period during which all orders entered by Members are automatically recorded in the Central Order Book (COB) without being executed.
- Orders can be amended or cancelled during this session. Entry of new limit orders is permitted. No market orders will be allowed during this session.
- The Theoretical Auction Price (TAP) is calculated each time a new order is entered or amended into the COB. At the end of pre-closing auction, order matching will happen at the TAP and will be considered as the opening price for the day.
- The TAP is established using the rules detailed in Appendix 1.

**Pre-opening adjustment (No Cancellation Period)**

The No Cancellation Period is a phase that occurs during the preopening auction where Members can enter new orders, however, modifying or withdrawing existing orders which leads to decreasing the order priority is not permitted.
Main Trading Session/ Continuous Trading

If there are matching orders in the COB at the end of the Preopening Auction, trades will take place at the theoretical opening price based on price/time priority. Once the preopening auction is completed continuous trading in that security begins and orders can be entered, maintained, modified and deleted. All orders that are unexecuted at the preopening auction are forwarded into the main trading session. The Off Order Book will be available to report negotiated deals and block trades from the start of the main trading session at 10:00 until 14:00.

Pre-closing session details

- The pre-closing auction will be an order accumulation period during which all orders entered by Members are automatically recorded in the Central Order Book (COB) without being executed.
- Orders can be amended or cancelled during this session. Entry of new limit orders is permitted. No market orders will be allowed during this session.
- The Theoretical Auction Price (TAP) is calculated each time a new order is entered or amended into the COB. At the end of pre-closing auction at 14:00, order matching will happen at the TAP and will be considered as the Closing Price for the day.
- The TAP is established using the rules detailed in Appendix 1.

Pre-closing Adjustment:

The characteristics of the Pre-closing Adjustment trading session are similar to the Pre-opening Adjustment as set out below:

- The Pre-closing Adjustment session will be an order accumulation period during which all order entered by Members are recorded on the Central Order Book without being executed.
- Entry of new limit orders entry is permitted. No market orders will be allowed during this session.
- Members cannot cancel or deactivate their pending orders or make the following amendments:
  - Order quantity decrease
  - Price decrease for Buy order
  - Price increase for Sell order
- At the end of the Pre-closing Adjustment session order matching will happen TAP.
- The TAP at which matching is done would be considered as the Closing Price.

Trading-At-Last:

The characteristics of the Trading-At-Last session are as follows:

- New orders can be entered only at a last trade Price for the day as determined in Pre-Close session or previous Closing Price if there are no trades for that symbol.
- The orders from Pre-closing session will be carried over in the system and their time priority will be maintained. During this session Orders can be amended to a last trade price for the day as determined in Pre-Close session or previous close price if there are no trades for that symbol.
- Orders can be withdrawn
• Matching can happen only at a last trade price for the day or previous close price if there are no trades for that symbol
• No market orders will be allowed during this session.
• This trading session will be shown as ‘Trade-At-Last’ on trading platform and published market data.

2.5 Order Types

Market Orders

Market orders can only be entered into the DFM X-Stream trading platform during the main trading session and do not stipulate a price. A market order will try to execute as much quantity as possible up to the trading safeguard (defined below) until it is completely filled. If a market order is only partially filled then it is converted into a limit order at the best bid price (for sell orders) or best ask price (for buy orders). Consequently, the existence of a matching order is essential. If no matching order is available the order is rejected by the DFM X-Stream trading platform.

Limit Orders

Limit orders stipulate a maximum purchase price or minimum selling price. Limit orders entered during the main trading session are executed either fully or partially, as market conditions permit. If the execution of a limit order is not immediately possible it is logged in the order book in descending buy-price order or ascending sell-price order (the price priority principle) and joins the queue of orders having the same price (the time priority principle).

2.6 Execution Conditions

Fill-and-Kill Orders

Fill-and-Kill (FAK) orders can only be placed during the main trading session. A FAK order may be filled in full or in part depending on market conditions at the time it is entered, and at the specified price or better (which could be a limit price or at market). The remaining part of any FAK order that is not executed immediately and in full is cancelled.

Fill or Kill Orders

Fill-or-Kill (FOK) orders, also known as All-or-None (AON) orders can only be placed during the main trading session. A FOK order can only be executed in full depending on market conditions at the time it is entered and at the specified price or better (which could be a limit price or at market). If a FOK cannot be immediately executed, the order will immediately expire.
2.7 Order Validity

There are 3 types of validity constraints for orders entered on the Nasdaq Dubai trading platform:

1. **Day**: A day order is the default validity and is only good for the current trading day. All outstanding orders with Day validity that have not been fully executed at the end of the trading day will automatically expire.

2. **Good till Cancelled (GTC)**: GTC orders are orders with a validity period of 365 days, these orders remain in the order book for 365 days, or until the order is either fully executed or the user cancels the order.

3. **Good till Date (GTD)**: GTD orders are orders that are good until a specified expiry date. The expiry date can be up to a maximum of 365 days in the future.

Note: When a FAK or FOK execution condition is specified, the order validity is automatically set to immediate.

2.8 Off-Order Book

The Off-Order Book is a reporting service for Block Trades, OTC transactions and Cross Trades entered into, outside of the Central Order Book (COB), but still on the Nasdaq Dubai exchange which affect the market statistics on the day when entered.
Nasdaq Dubai offers its Members 3 ways in which they can report Off Order Book Transactions:

1. By sending the details of the trade, signed by authorized signatories to trading@nasdaqdubai.com.
2. Through Bloomberg IB chat, provided the user is on our list of authorized traders.
3. By calling the Nasdaq Dubai Trading Desk at +971 4 305 5472/5474, followed by an email confirmation.

2.9 Block Trades

Block Trades shall mean Off-Order Book Transactions that are equal to, or exceed, the following thresholds defined as "Normal Block Amount" (NBA).

NBA = US$750,000 in the case of Admitted Securities traded on a continuous basis.

Block Trades in Admitted Securities shall be affected;

1. At a price of 5% around the last traded price (LTP) if the amount of the Block Trade is equal to or greater than the relevant NBA.
2. At a price within a range of 10% around the last traded price (LTP) if the amount of the Block Trade is equal to or greater than 5% of the market capitalization of the admitted security.

Nasdaq Dubai shall have discretion to allow Block Trades outside of the above specified ranges, after considering prevailing market and liquidity conditions.

Publication of Block Trades

Block Trades in which the Member does not act as principal shall be reported to Nasdaq Dubai immediately upon execution. Nasdaq Dubai will publish such trades immediately upon reporting. Block Trades in which the Member acts as principal with an amount equal to or greater than 5% of market capitalization, where the member has not yet closed out their positions, may request to defer reporting until the opening of the continuous trading session on the following business day, as appropriate.

Principal Block Trades shall be reported and published as follows:

1. Within 60 minutes of execution if the amount of the Block Trade is less than twice the relevant NBA; or
2. Within 120 minutes of execution if the amount of the Block Trade is equal to or greater than twice the relevant NBA.

For Block Trades that are executed outside the main trading session, reporting can be deferred until the beginning of the following business day which becomes the trade date of the transaction.

2.10 Cross Trade

An automatic execution through the Central order book (COB) of a buy and sell order from a single Member for its underlying clients is permitted by the trading platform during continuous trading. Cross orders have to be limited at a price within the Best Bid-Offer (BBO). A cross order at the BBO is only
allowed at a volume higher than the volume available in the order book at the Best Bid-Offer price. In a situation where a Cross Trade is reported but, between the time of reporting and the time of registering the trade on market by the NASDAQ Trading Team, the trade no longer meets the Nasdaq Dubai crossing rules, Nasdaq Dubai may, at its sole discretion, allow for the Cross Trade to be executed.

- If there is no tradable price within the market’s Best Bid-Offer at the time of entry, the trade can be crossed at either the best Bid or Offer.
- If there are no quotes in the Central order book at the time of entry, the trade can be crossed at or around the previous closing price where the trade price will be subject to the reference safeguard limits.

2.11 Price Determination

1. Opening Price

Opening Price is the Theoretical Auction Price calculated in accordance with Appendix 1. If such Theoretical Auction Price cannot be determined for lack of activity in auction period, the first trade on a security determines the opening price of that security.

2. Closing Price

On each business day, Nasdaq Dubai will determine the closing price during pre-closing auction. If such closing price cannot be determined in pre-closing auction, the closing price shall be the last traded price of the security during the same business day.

If there are no trades on the same business day, then the previous day’s closing price shall be the closing price.

For dual listed illiquid securities, the closing price will be determined by the closing price of the security in the primary market.

Nasdaq Dubai reserves the right to set a closing price other than in accordance with this policy if it believes such action is required to maintain a fair and orderly market.

3. Reference Price

The Reference price is used for ‘order reasonability’ checks, where there is no Bid/Offer. The Reference Price of a security is either the opening price of the security or the previous close price of the security if there is no opening price, unless explicitly set by the NASDAQ Dubai.

4. Price during continuous trading

Each new incoming order is immediately checked for execution against orders on the other side of the order book. Orders can be executed in full, partially, or not at all. Thus each new incoming order may generate none, one, or several executions. Orders in the order book will be executed according to the price/time priority principle. Orders, or parts thereof which have not been executed, are sorted in the order book according to price/time priority.
Price determination in continuous trading is carried out according to the following rules in addition to the price/time priority:

**Rule 1:**

If an incoming market order or limit order meets an order book in which there are limit orders on the other side, the highest bid limit or lowest ask limit in the order book determines the price for the executable volume of the incoming order. The next limit order determines the price of any remaining volume, and so on until no volume remains.

Example: The following order book has only limit orders on the bid side. A Sell 100 @ Market order is entered.

<table>
<thead>
<tr>
<th>Bid</th>
<th>Offer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qty.</td>
<td>Price</td>
</tr>
<tr>
<td>200</td>
<td>85</td>
</tr>
<tr>
<td>400</td>
<td>84</td>
</tr>
<tr>
<td>1000</td>
<td>83</td>
</tr>
</tbody>
</table>

Result: The sell order will execute against the highest bid limit resulting in the following execution: Sold 100 @ 85.

<table>
<thead>
<tr>
<th>Bid</th>
<th>Offer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qty.</td>
<td>Price</td>
</tr>
<tr>
<td>200</td>
<td>85</td>
</tr>
<tr>
<td>400</td>
<td>84</td>
</tr>
<tr>
<td>1000</td>
<td>83</td>
</tr>
</tbody>
</table>

Result: Sold 200 @ 85 and 400 @ 84, with the remaining 400 placed on the Sell Side @ 84.

**Rule 2:**

If an incoming market order or limit order meets an order book in which there are not enough limit orders on the other side to fully execute the Market Order, the highest bid limit or lowest ask limit in the order book determines the price for the executable volume of the incoming order. After the Market Order is partially executed and no more volume remains on the other side of the COB, the Market Order will be converted into a limit order at the price of the first execution.

Example: The following order book has only limit orders on the bid side. A Sell 2,000 @ Market order is entered.
Result: Sold 200@85, Sold 400@84, Sold 1,000@83; once there is no longer any volume available for execution, the Market Order will then automatically convert the remaining 400 shares to a limit sell order of 400 @ 85.

2.12 Tick Size

The tick size table for the Equities, Structured Products, and Equity Derivatives Markets will follow the schedule below:

<table>
<thead>
<tr>
<th>Price Range</th>
<th>Tick Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below US$ 2.00</td>
<td>0.001</td>
</tr>
<tr>
<td>From US$ 2.00 to US$ 10.00</td>
<td>0.005</td>
</tr>
<tr>
<td>From US$ 10.00 and above</td>
<td>0.01</td>
</tr>
</tbody>
</table>

**Example:**
- The next price step for a security trading at 0.250 will be 0.251.
- The next price step for a security trading at 2.000 will be 2.005.
- The next price step for a security trading at 10.00 will be 10.01

2.13 Safeguards

1. **Reference Safeguard**

In the following situation the Reference Safeguard will prevent the order from entering DFM X-Stream trading platform:

<table>
<thead>
<tr>
<th>Price Range</th>
<th>Below &lt; Limit UP/ Down &gt; Above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than US$ 0.100</td>
<td>&lt; ± 50 % &gt; from previous closing price</td>
</tr>
<tr>
<td>From US$ 0.100 to 0.249</td>
<td>&lt; ± 20 % &gt; from previous closing price</td>
</tr>
<tr>
<td>From US$ 0.250 to 0.499</td>
<td>&lt; ± 15 % &gt; from previous closing price</td>
</tr>
<tr>
<td>Above US$ 0.500</td>
<td>&lt; ± 10 % &gt; from previous closing price</td>
</tr>
</tbody>
</table>
Example:

<table>
<thead>
<tr>
<th>Below &lt; -10%</th>
<th>-10%</th>
<th>Previous Closing Price</th>
<th>+10%</th>
<th>Above &gt; +10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rejected</td>
<td>US$ 0.675</td>
<td>US$ 0.750</td>
<td>US$ 0.825</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

Nasdaq Dubai reserves the right to redefine and modify the safeguard ranges intraday depending on market situations including but not exclusive to re-instatement of a security following a halt or suspension of trading, acquisitions, significant corporate news or extraordinary corporate actions. Nasdaq Dubai will notify the market when any change to the threshold is made intraday.

2. Order Size

The maximum allowed order volume is 10,000,000 shares per order.

The maximum allowed order value (quantity X price) is USD$ 20,000,000 per order.

Any order placed with a volume above 10,000,000 shares or with value above US$ 20,000,000 will be rejected by the trading system.

2.14 Security States

Normally, the state of all securities will be active and trading will occur as set out in the timetable of the Board to which they belong. In certain circumstances, however, securities may be subject to other states. When changes occur in the status of a security an information message is disseminated via the Nasdaq Dubai Trading Platform.

Securities on Nasdaq Dubai can be in the following states:

- **Active**: Securities in this state are available for trading. Members can enter new orders, amend existing orders, and cancel orders. Securities in an Active state will be represented by the letter “A” in the Security Status Indicator of that Security.

- **Suspended**: Securities in a Suspended state are not available for trading. Members cannot enter new orders, amend or cancel any pending orders on these securities. Securities in a suspended state will be represented by the letter “S” in the security status indicator of that security.

2.15 Trade Cancellation

Members cannot cancel or modify any trades matched on NASDAQ Dubai. However, in the case of a material error by a Member which was notified to Nasdaq Dubai within 15 minutes of the transaction being executed, Nasdaq Dubai may, but shall not be obliged to, cancel all securities transactions affected as a consequence of such error. Nasdaq Dubai may also cancel any and all securities transactions which in its reasonable judgment do not comply with its Rules, DFSA Rules, applicable laws or regulations.
These cancellation rules do not apply if the following conditions are true:
Trader errors such as the following are not considered to be grounds for cancelling a trade unless a situation occurs where a cancellation would be in the best interest of maintaining a fair and orderly market:

- Entering a sell order instead of a buy order.
- Entering an incorrect price where the price that the trade occurred at is not significantly away from the current best bid offer (BBO) or the last traded price (LTP) where no BBO exists.
- Entering a higher or lower quantity than intended where it can easily be reversed. (Bids and offers are readily available at reasonable prices for that instrument).
- The reversal of the error would result in a total loss of less than USD 1,000 or equivalent.

If a request for cancellation was received within a reasonable time, Nasdaq Dubai will deal with such request on a case by case basis and apply the above guidelines as far as is practicable. Nasdaq Dubai at its sole discretion will decide if a trade cancellation is required.

Time for a request for cancellation

A Trading Member wishing to cancel a transaction shall submit the cancellation request via phone (+971 4 305 5472/4) or email to trading@nasdaqdubai.com no later than fifteen minutes from the time the trade took place. Telephone requests must be confirmed by email as soon as practicable.

Procedures:

When a Nasdaq Dubai Trading Member has submitted a request for cancellation, Nasdaq Dubai will assess whether the prerequisites for cancellation are present. If the prerequisites for the cancellation request are satisfied, Nasdaq Dubai shall advise the other Nasdaq Dubai Trading Members involved in the transaction as soon as possible that the trade will be cancelled.

Trade Cancellations at the request of a member will not be entitled to a reversal of trading fees.

Exchange initiated Trade Cancellations:

Nasdaq Dubai may, where required, cancel a trade to ensure the integrity of the market and that the market is operating in a fair and orderly manner.

Trade cancellations initiated by Nasdaq Dubai may be the result of:

- An indisputable error or mistake which is caused by a technical or manual error entering an incorrect price where the price that the trade occurred is significantly away from the current BBO, or the LTP where no BBO exists.
- Breach of a material provision of law, regulation, or rule.
- Technical disruptions in the trading and/or clearing systems beyond the Trading Member's control.
- Trades that result in a misrepresentation of the market price.

Nasdaq Dubai will have discretion to levy a trade cancellation fee on the party initiating the cancellation. If a trade cancellation is a result of an error on Nasdaq Dubai’s part then the fees of the cancelled trade will be waived for the members involved.
Appendix 1: Calculation of Theoretical Auction Price (TAP)

Calculation Steps:
There are three steps in determining the TAP (i.e. Closing Price). If a closing price cannot be determined after the first step the model progresses to the second step and, if necessary, the third. The steps to calculate the TAP are applied in the following order:

• Step 1: Maximum Tradable Volume – the price that generates the greatest tradable volume (see Example 1).

• Step 2: Establishing the Minimum Surplus – if there is more than one price at which there is Maximum Tradable Volume, the price with minimum unexecuted volume (Minimum Surplus) will be chosen (see example 2).

• Step 3: Mid Point – midpoint of the prices that have more than one Maximum Tradable Volume and at least two prices with the same Minimum Surplus (see examples 3 and 4). In order to determine the TAP, the midpoint is rounded up to the nearest price tick.

Step 1: The Maximum Tradable Volume

This step establishes the price(s) at which the maximum number of securities will be traded. There are two stages involved in applying this rule.

1. The first stage adds together all the bids (Cumulative Bid) and all the asks (Cumulative Ask). The Cumulative Bid is calculated by taking the quantity of securities from the highest bid price and adding to this the quantity of securities from the second highest bid price and then the third highest bid and so on. The Cumulative Ask is calculated by taking the quantity of securities to from the lowest ask price and adding to this the quantity of securities from the second lowest ask price, then the third lowest and so on.

2. The second stage establishes the greatest tradable volume based on the Cumulative Bid and Cumulative Ask at each price level. In Example 1 below there is a Cumulative Bid of 180 securities at a price of $0.81 that match with a Cumulative Ask of 180 securities at the same price of $0.81. In this example, the purchase orders of 50 at $0.83 and 70 at $0.82 were also executed at the lower price of $0.81. On the other side, the sale orders of 100 at $0.79 and 60 and $0.80 were also executed at the higher price of $0.81.
Example 1:

<table>
<thead>
<tr>
<th>Bid Quantity (limit orders)</th>
<th>Cumulative buy quantity</th>
<th>Surplus</th>
<th>Price</th>
<th>Surplus</th>
<th>Cumulative sell quantity</th>
<th>Ask Quantity (limit orders)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>50</td>
<td>0.83</td>
<td>130</td>
<td>180</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>120</td>
<td>0.82</td>
<td>60</td>
<td>180</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>180</td>
<td>0</td>
<td>0.81</td>
<td>180</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>180</td>
<td>20</td>
<td>0.80</td>
<td>160</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td></td>
<td>180</td>
<td>80</td>
<td>0.79</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

In the order book situation displayed above, the TAP will be $0.81 according to the Maximum Tradable Volume.

Step 2: Establishing the Minimum Surplus

If there is more than one price at which there is a Maximum Tradable Volume, the price with the minimum surplus (the fewest unexecuted securities) will be chosen as the TAP.

In Example 2 below, the Maximum Tradable Volume is 80 being the total number of securities that make up the Cumulative Ask which can be executed at three prices of $0.80, $0.81 and $0.82. In this example the TAP is $0.82 because the Maximum Tradable Volume of 80 can be executed against a Cumulative Bid of 90 securities at a price of $0.82 leaving just 10 securities unexecuted.

Example 2:

<table>
<thead>
<tr>
<th>Bid Quantity (limit orders)</th>
<th>Cumulative buy quantity</th>
<th>Surplus</th>
<th>Price</th>
<th>Surplus</th>
<th>Cumulative sell quantity</th>
<th>Ask Quantity (limit orders)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>50</td>
<td>0.83</td>
<td>30</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>90</td>
<td>10</td>
<td>0.82</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>100</td>
<td>20</td>
<td>0.81</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>20</td>
<td>0.80</td>
<td>80</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>50</td>
<td>0.79</td>
<td>50</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

In the order book situation displayed above, the TAP will be $0.82 according to the Maximum Tradable Volume with the Minimum Surplus.
Step 3: Midpoint

Step 3 applies in a situation where there is more than one Maximum Tradable Volume with the same Minimum Surplus. In this case the midpoint of the prices that have more than one minimum surplus becomes the TAP. In Example 3 below, the Maximum Tradable Volume yields three possible auction prices; the Minimum Surplus also yields three possible auction prices; therefore, the Midpoint is used to determine the TAP.

Example 3:

<table>
<thead>
<tr>
<th>Bid Quantity (limit orders)</th>
<th>Cumulative buy quantity</th>
<th>Surplus</th>
<th>Price</th>
<th>Surplus</th>
<th>Cumulative sell quantity</th>
<th>Ask Quantity (limit orders)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>50</td>
<td>0.83</td>
<td>80</td>
<td>130</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>110</td>
<td>0.82</td>
<td>20</td>
<td>130</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>110</td>
<td>0.81</td>
<td>20</td>
<td>130</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>110</td>
<td>0.80</td>
<td>20</td>
<td>130</td>
<td></td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>110</td>
<td>70</td>
<td>0.79</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

In the order book situation displayed above, the TAP will be **$0.81** according to the Maximum Tradable Volume with the Minimum Surplus and taking the Midpoint.

In Example 4 below, the Maximum Tradable Volume yields two possible auction prices; the Minimum Surplus yields two possible auction prices; therefore, the Midpoint of **$0.805** is used to determine the TAP.

Example 4:

<table>
<thead>
<tr>
<th>Bid Quantity (limit orders)</th>
<th>Cumulative buy quantity</th>
<th>Surplus</th>
<th>Price</th>
<th>Surplus</th>
<th>Cumulative sell quantity</th>
<th>Ask Quantity (limit orders)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>50</td>
<td>0.82</td>
<td>20</td>
<td>70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>70</td>
<td>0.81</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>70</td>
<td>0.80</td>
<td>70</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>70</td>
<td>40</td>
<td>0.79</td>
<td>30</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>