ORDER MATCHING WITH THE EQUILIBRIUM-PRICE-BASED TRADE-MATCHING ALGORITHM

Intro

Based on the orders ranked according to their sequence of execution, the total volume for which bids and offers exist shall be determined for each price level.

CASE 1

The price at which the largest volume can be traded shall be identified, and that will be the transaction price of the security.

CASE 2

If there are several prices at which the tradable volume of the security is identical with the largest possible tradable volume, the transaction price will be the one at which the unfilled volume is the smallest.

CASE 3

If there are several prices at which transactions can be concluded for the largest possible volume, and the volume that cannot be filled at such prices is also identical, however the surplus is only on the buy side in the order book, then, the highest possible price shall be selected as transaction price. If the quantity in excess is only on the sell side, then, the lowest of the possible prices shall be selected as transaction price.

CASE 4

If there are several prices at which transactions can be concluded for the largest possible volume, and the volume that cannot be filled at such prices is also identical, further, buy and also sell quantities in excess can be detected on these price levels, or there is no surplus at all, and the mathematical average of these prices matches the tick size, then that will be selected as the transaction price.

CASE 5

If the mathematical average of the above does not match the tick size, the average shall be rounded – in accordance with the tick size – towards the reference price and the resulting price shall be the transaction price. The average shall be rounded downwards in all cases where there is no reference price for the security.

Example - Case 1

If there is only one price at which the largest quantity can be traded, that price will be selected as transaction price:

BUY				SELL			
Sequence of execution	Total order volume for the given price	Qty.	Price	Price	Qty.	Total order volume for the given price	Sequence of execution
1	**15**	**15**	**5330**	5320	5	5	1
2	30	15	5325	5325	5	10	2
3	45	15	5320	**5330**	**10**	**20**	3
4	55	10	5315	5350	10	30	4
5	65	10	5305	5700	10	40	5
6	75	10	5200				

Price	Largest executable volume	Unfilled volume
5330	**15**	**5**
5325	10	20
5320	5	40

As it is shown above, all transactions will trade at HUF 5330 as the highest executable volume belongs to that price level.

Example - Case 2

If there are several prices at which the largest volume can be traded, the transaction price will be the one at which the unfilled volume is the smallest:

BUY				SELL			
Sequence of execution	Total order volume for the given price	Qty.	Price	Price	Qty.	Total order volume for the given price	Sequence of execution
1	5	5	5330	**5325**	**5**	**5**	1
2	**15**	**10**	**5325**	5330	15	20	2
3	30	15	5320	5350	10	30	3
4	40	10	5315	5700	10	40	4
5	50	10	5305				5
6	60	10	5200				

Price	Largest executable volume	Unfilled volume
5330	5	15
5325	**5**	**10**

As it is shown above, all transactions will trade at HUF 5325 since the highest executable volume is equal at both price levels (HUF 5330 and 5325) however the unfilled volume is less at 5325.

Example - Case 3/a

If there are several prices at which the largest quantity that can be traded is identical, and the quantity that cannot be traded at such prices is also the same, but dropout quantities are only on the buy side in the order book, then, the highest of these prices shall be selected as transaction price.

BUY				SELL			
Sequence of execution	Total order volume for the given price	Qty.	Price	Price	Qty.	Total order volume for the given price	Sequence of execution
1	**50**	**50**	**5330**	**5300**	**15**	**15**	1
2	65	15	5290	5350	10	25	2
3	75	10	5250	5700	10	25	3
4	85	10	5245				
5	95	10	5200				

Price	Largest executable volume	Unfilled volume
5330	**15**	**35**

As is it shown above, there are two possible prices (HUF 5330 and HUF 5300) where both the tradable and dropout quantities are identical, however surplus remains only on the buy side of the order book (unfilled volume = 35), therefore the highest of the two prices (HUF 5330) is the transaction price.

Example - Case 3/b

If there are several prices at which the largest quantity that can be traded is identical, and the quantity that cannot be traded at such prices is also the same, but dropout quantities are only on the sell side in the order book, then, the lowest of these prices shall be selected as transaction price.

BUY				SELL			
Sequence of execution	Total order volume for the given price	Qty.	Price	Price	Qty.	Total order volume for the given price	Sequence of execution
1	**10**	**10**	**5330**	**5300**	**60**	**60**	1
2	25	15	5290	5350	10	70	2
3	35	10	5250	5700	10	80	3
4	45	10	5245				
5	55	10	5200				

Price	Largest executable volume	Unfilled volume
5300	**10**	**50**

As is it shown above, there are two possible prices (HUF 5330 and HUF 5300) where both the tradable and dropout quantities are identical, however surplus remains only on the sell side of the order book (unfilled volume = 50), therefore the lowest of the two prices (HUF 5300) is the transaction price.

Example - Case 4

If there are several prices at which the largest quantity can be traded, and the quantity that cannot be traded at such prices is also identical, and the mathematical average of these prices matches the tick size, the transaction price will be selected as follows:

BUY				SELL			
Sequence of execution	Total order volume for the given price	Qty.	Price	Price	Qty.	Total order volume for the given price	Sequence of execution
1	**10**	**10**	**5330**	**5300**	**10**	**10**	1
2	**20**	**10**	**5300**	**5330**	**10**	**20**	2
3	35	15	5290	5350	10	30	3
4	45	10	5250	5700	10	40	4
5	55	10	5245				
6	65	10	5200				

Price	Largest executable volume	Unfilled volume
5330	**10**	**10**
5300	**10**	**10**

As it is shown above, there are two price levels at which the executable volumes and unfilled volumes are identical. If so, the arithmetical average (HUF 5315) of these prices shall be determined as transaction price.

Example - Case 5

If there are several prices at which the executable and unfilled volumes are identical, and the mathematical average of these prices does not match the tick size, the average shall be rounded towards the reference price (previous day's closing price) in accordance with the tick size, and the resulting value will be selected as the transaction price:

BUY				SELL			
Sequence of execution	Total order volume for the given price	Qty.	Price	Price	Qty.	Total order volume for the given price	Sequence of execution
1	**10**	**10**	**5330**	**5325**	**10**	**10**	1
2	**20**	**10**	**5325**	**5330**	**10**	20	2
3	35	15	5320	5350	10	30	3
4	45	10	5315	5700	10	40	4
5	55	10	5305				
6	65	10	5200				

Previous days' closing price: 5335

Price	Largest executable volume	Unfilled volume
5330	**10**	**10**
5325	**10**	**10**

As it is shown above, there are two price levels (HUF 5330 and 5325) at which both the largest executable volume and the unfilled volume are identical. Since the arithmetical average is HUF 5327,5 and the t is 5 (five), therefore the value should be rounded towards the reference price, thus HUF 5330 shall be determined as the transaction price.