**Technological changes at MOEX Derivatives**

* Automatic exercise;
* How unexercised options affect settlement;
* Changes to risk management under automatic exercise;
* Weeklys options;
* New expiration time for USD/RUB and EUR/RUB futures and options.

**Section 1. Automatic exercise**

* 1. Moscow Exchange Derivatives is completely revamping its approach to options exercise. Going forward, all in the money (ITM) options on the Derivatives Market will be exercised automatically. The following list of features highlights some of the key aspects of the new automatic exercise algorithm.
* The change applies to all traded options (i.e. all underlyings and all options types, including Quarterlys, Monthlys and Weeklys).
* Options are exercised automatically during the *evening clearing session* on the contract’s expiration date, with the exception of USD/RUB and EUR/RUB options, which expire during the *intraday clearing session* on the contract’s expiration date (see Section 5 for more details).
* ITM options are exercised automatically, i.e. call options with a strike price below the underlying future’s settlement price[[1]](#footnote-1), and put options with a strike price above the underlying future’s settlement price.
* With ATM[[2]](#footnote-2) options, exactly *half* of the position is exercised automatically[[3]](#footnote-3). If half of the options position is not a whole number, for calls the amount to be exercised is rounded up to the nearest integer (0.5 = 1), and for puts it is rounded down (0.5 = 0).

*Example: A trader is long 101 XYZ Feb 200 calls and long 101 XYZ Feb 200 puts. If XYZ settles at 200, 51 calls (round\_up(101/2; 0) = 51) and 50 puts (round\_down(101/2; 0) = 50) will be exercised automatically. The trader will be left with a resulting position of long 1 XYZ future.*

* The automatic exercise algorithm is not customizable; however, brokerage firms may impose certain restrictions on their clients (see clauses 3 and 4 of this Section for details);
* A manual request must be submitted to exercise an option early.

As a reminder, here is the way options are currently exercised:

* All deep ITM[[4]](#footnote-4) options are exercised automatically on expiration day;
* ITM Quarterlys[[5]](#footnote-5) options on cash-settled futures are exercised automatically on expiration day;
* Brokerage firms may customize the automatic exercise algorithm;
* A manual request must be submitted to exercise an option early;
* On expiration day, if the moneyness of an expiring option does not fulfill the Exchange’s or Broker’s requirements to trigger automatic exercise, a manual request must be submitted to exercise the option.
	1. Automatic exercise may be turned off through the trading platform by entering a negative amount in the “Options Exercise Request”. Any quantity of options in a portfolio may be excluded from automatic exercise, up to the total amount. Canceling automatic exercise is possible at any time up to 18:50 MSK on expiration day[[6]](#footnote-6); or, for USD/RUB and EUR/RUB options, up to 14:00 MSK (see Section 5 for more details).
	2. Brokers may restrict clients from altering the options exercise settings, including early or automatic exercise, in which case the Exchange’s default settings would apply. Clients would need to contact their broker to make any changes.
	3. Brokers may choose the underlyings whose OTM options they want to restrict clients from manually exercising (either early or at expiration[[7]](#footnote-7)). Clients would still be able to manually early exercise ITM and ATM options. The automatic exercise algorithm would apply as usual.
	4. The input screen for entering options exercise instructions and futures settlement prices is now removed from the trading system. A corresponding table in the Streams replication is also removed.
	5. The Plaza II Gateway is changed as follows:
	+ num\_clr\_2delivery (i4) field, added to the FutChangeClientMoney request, specifies the number of clearing sessions before options expiration when required margin starts increasing (see Section 3 for details).
	+ num\_clr\_2delivery (i4) field has also been added to the ‘Part’ table in the FORTS\_PART\_REPL stream, performing the same function.
	+ Amount field, in the OptChangeExpiration request, can now take negative values, which denote the number of options a trader does not want exercised.
	+ Amount (i4) field, in the opt\_exp\_orders table of the FORTS\_OPTINFO\_REPL stream, can now take negative values as well to prevent the exercise of options.

External documentation is being updated to reflect the changes.

**Section 2. How unexercised options affect settlement**

If a long buyer chose not to exercise his ITM options at expiration, the amount of underlying futures that the short sellers have to deliver on those options will decrease proportionately.

*Example: Suppose three sellers are each short 100 XYZ calls and one buyer is long 300 XYZ calls. At expiration, suppose the calls are ITM and the buyer decides not to exercise 100 of them. Then during the last clearing session, the sellers will be obligated to settle a total of 200 calls as follows:*

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Initial position size* | *Will not be liable for (# of calls)* | *Must deliver on (# of calls)* |
| *Seller A* | *-100* | *34* | *66* |
| *Seller B* | *-100* | *33* | *67* |
| *Seller C* | *-100* | *33* | *67* |

*In all three sellers’ accounts, of the 100 ITM short calls, 33 will expire unexercised; the sellers will need to deliver only on the remaining 66 calls. In an uneven allotment, however, such as in our example – where the unexercised 100 calls must be divided among 3 short sellers – the remaining 1 unexercised option (100 % 3 =* ***1****) will be allotted to the* ***first seller****. Therefore, Seller A, being the first to short the calls, will have been exercised on 66 calls, rather than 67, as the others.*

*Additionally, in an uneven allotment, a situation may arise where the remainder of options expiring unexercised is bigger than the position[[8]](#footnote-8) of the first seller. In that case, the remainder would be split between the sellers using the same time-based algorithm: the first seller would be allotted the total amount of his position and the second seller would receive the rest; if the second remainder is also bigger than the second seller’s position size, it goes on to the third seller in line, and so on.*

**Section 3. Changes to risk management under automatic exercise**

For options approaching expiration, margin requirements will now be calculated as follows:

* Exercise scenarios are added to volatility scenarios two days before the expiration date;
* For each exercise scenario, a risk profile is calculated for a model portfolio, consisting of exercised ITM and unexercised OTM options;
* In the new risk management algorithm, “NetPositive”[[9]](#footnote-9) is always enabled.
	+ In the existing (old) algorithm, “NetPositive” is switched off one day before options expire.

**Section 4. Weeklys options**

Weeklys expire every Thursday; or, if the Derivatives Market is closed on that day, the trading day preceding Thursday. Monthlys and Quarterlys expiration dates must not coincide with the Weeklys. For example, Weeklys expiring on a third Thursday will not be listed, as that would coincide with the Monthlys expiration.[[10]](#footnote-10)

Weeklys options chains will be designated by an additional symbol at the end of the options short code.

*For example:*

|  |  |  |
| --- | --- | --- |
| ***Option*** | ***Code*** | ***Code meaning*** |
| *Weeklys* | *RI125000BK4D* | *Futures-style RTS Weeklys calls that expired on November 27, 2014.* |
| *Monthlys*  | *RI125000BK4* | *Futures-style RTS Monthlys calls that expired on November 17, 2014.* |

*where:*

“RI” – the underlying symbol (two characters);

“125000” – the strike price (variable number of integers);

“B” – settlement type (A – equity style, B – futures style);

“K” – month and type of option (see “options expiration codes” table below for a complete list);

“4” – expiration year (one integer);

“D” – Weeklys options chain designation (see “Weeklys options chain designations” table below for a complete list).

*Options expiration codes:*

|  |  |  |
| --- | --- | --- |
| **Month** | **Calls** | **Puts** |
| January | A | M |
| February | B | N |
| March | C | O |
| April | D | P |
| May | E | Q |
| June | F | R |
| July | G | S |
| August | H | T |
| September | I | U |
| October | J | V |
| November | K | W |
| December | L | X |

*Weeklys options chain designations:*

|  |  |
| --- | --- |
| **Field code** | **Week**  |
| null | Monthlys or Quarterlys. |
| A | Weeklys expiring on the first Thursday of the month. |
| B | Weeklys expiring on the second Thursday of the month. |
| C | Weeklys expiring on the third Thursday of the month. |
| D | Weeklys expiring on the fourth Thursday of the month. |
| E | Weeklys expiring on the fifth Thursday of the month. |

**Section 5. New expiration time for USD/RUB and EUR/RUB futures and options**

Currently, USD/RUB and EUR/RUB futures and options expire and settle during the expiration day’s evening clearing session (18:45 to 19:00 MSK). However, Moscow Exchange publishes their exercise settlement values by 12:30 MSK. Therefore, to avoid an unnecessary delay, futures’ and Quarterlys options’[[11]](#footnote-11) expiration time is being changed from evening to the intraday clearing session (14:00 to 14:03 MSK). Monthlys and Weeklys, however, will not be affected by this change; i.e., their expiration time and settlement remaining during the evening clearing session.

All options will be subject to automatic exercise (see Section 1 for details).

1. Settlement price of a futures contract is determined during the evening clearing session on the contract’s last trading day, and is used for determining profit or loss. [↑](#footnote-ref-1)
2. An option is at the money (ATM) when the strike price is equal to the settlement price of the underlying future. [↑](#footnote-ref-2)
3. In case of early exercise of ATM options, only the amount indicated in the buyer’s exercise request is exercised. [↑](#footnote-ref-3)
4. A call option is “deep ITM” when the strike price is below the underlying future’s current lower limit; or, in the case of a put option, the strike price is above the underlying future’s upper limit. [↑](#footnote-ref-4)
5. To trigger automatic exercise, Quarterlys need only expire ITM, as opposed to deep ITM. [↑](#footnote-ref-5)
6. Expiration day opens at 19:00 MSK on the previous business day and closes at 18:45 MSK on the expiration date; analogous to the schedule of a normal trading day on the Moscow Exchange. [↑](#footnote-ref-6)
7. USD/RUB and EUR/RUB options expire during the intraday clearing session on the expiration date (see Section 5 for details); all other options expire during the evening clearing session on the corresponding expiration date. [↑](#footnote-ref-7)
8. The algorithm considers a position in terms of its increments. Therefore, if a position was scaled into, the different increments will be considered separately, based on their timestamps. [↑](#footnote-ref-8)
9. “NetPositive” is a risk netting procedure, where near the money long options reduce overall portfolio margin requirements. [↑](#footnote-ref-9)
10. Currently, only Weeklys will expire on Thursdays. Monthlys and Quarterlys will continue to expire on the 15th of the month, until further notice. In order to prevent their expirations from coinciding, Weeklys will not be listed during the week that Monthlys or Quarterlys expire. [↑](#footnote-ref-10)
11. Quarterlys options expire simultaneously with their underlying futures, since currency futures are only listed with a quarterly month expiry. [↑](#footnote-ref-11)