

Unified Collateral Pool of the Securities, FX and Derivatives markets

MOSCOW EXCHANGE

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Objectives

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Abbreviation List

CSCR Client section of clearing registers

2. DM Derivatives market

FXM FX market

SA **Settlement Account**

SC **Sub-accounts Cluster**

6. **SM** Securities market

7. TA Trade Account

Trading-Clearing System **TCS** 8.

9. UP **Unified Pool**

Migration to UP



Objectives

Objectives of the project "Unified Collateral Pool"



Objectives of the project "Unified Collateral Pool"

- **Cross-margining** implementation between markets of the Moscow Exchange.
- **Reduce on costs** of clearing members in respect of operations execution on 2 the MF markets.
- **Launching new products and services**, which will allow members attract 3 new clients.
- Provision members with the unique **clearing functional**, which covers operations on the FX, Securities and Derivatives markets:
 - single account;
 - unified collateral;
 - cross-margining;
 - netting when settling trades concluded on the FX, Securities and Derivatives markets.



Advantages

Advantages of the Unified Collateral Pool



Questions

Advantages of the Unified Collateral Pool

1 Collateral

- Unification of the list of assets¹, accepted as Collective clearing collateral on the Securities, FX и Derivatives markets (including acceptance of sovereign bonds и eurobonds on all markets).
- Unification of the approach κ to the acceptance of assets into Individual clearing collateral.
- **Settlements on net basis** under obligations and claims arising from trades, concluded on the Securities, FX and Derivatives markets, using assets, recorded under the Trade Account of the Unified Pool.
- Implementation of **cross-margining** on the Securities, FX and Derivatives markets.



Objectives

¹ – Implemented in 2015.

Unification of the list of assets, accepted as collateral (1/2)

Into the list of assets, accepted into the Unified Pool, will be included:

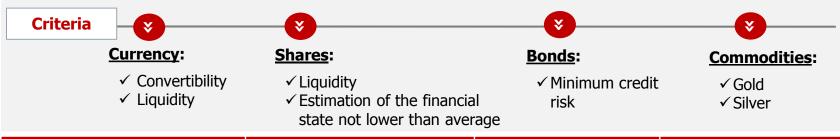
- Russian rubles
- Foreign currencies:
 - **USD** (US dollar)
 - **EUR** (euro)
 - CNY (yuan)
 - GBP (pound sterling)
 - **CHF** (Swiss franc)
 - HKD (Hong Kong dollar)
 - **BYN** (Belorussian ruble)
- Precious metals:
 - **GLD** (gold)
 - **SLV** (silver)
- Securities

Evaluation of assets, accepted as individual clearing collateral, will be executed in accordance with the Risk parameters of the Securities market Calculation Methodology.



Objectives

Unification of the list of assets, accepted as collateral (2/2)



Type of collateral asset	FX market ar metals r			and money arket	Derivativ	es market
	As is	To be	As is	To be	As is	To be
		Cash funds				
RUB	✓	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
USD, EUR	\checkmark	✓	✓	\checkmark	\checkmark	\checkmark
GBP, CNY	\checkmark	\checkmark	\checkmark	✓	X	\checkmark
CHF	\checkmark	\checkmark	x	\checkmark	X	✓
HKD, BYN	x	\checkmark	x	✓	X	✓ /
		Securities				
Bonds	X	\checkmark	\checkmark	\checkmark	x	\checkmark
Shares	X	✓	✓	\checkmark	✓	✓
Precious metals						
GLD	\checkmark	\checkmark	X	\checkmark	x	\checkmark
SLV	✓	\checkmark	x	\checkmark	x	✓



Settlement on a net basis

- Obligations and claims, recorded under unified Settlement Account per asset, arising from trades, executed on different markets, are terminated by netting on a Settlement Date.
- Settling all unfulfilled obligations under single accounts (obligations to pay variation margin inclusively) rollover trades (REPO, swap or terminating buy/sell trades) using unified collateral are concluded.
- Unification of the Time Schedule for the execution of obligations among all markets:
 - obligations in securities are fulfilled during clearing sessions at 17:00 and 19:00,
 - obligations in cash of Clearing Members in favor of the CCP not later than cut-off time for the relevant currency.
- Termination of obligations with arrived Settlement Date in the Clearing System of the Securities market is executed in the standard order.



Objectives

Migration to UP

Ouestions

Cross-margining

On the FX market:

• Recording inter-asset spreads under positions, formed under Trades EUR/USD, USD/RUB and EUR/RUB – *implemented in June 2016*.

On the Securities market:

• Recording inter-asset spreads for groups of securities: on the first stage will be applied to OFZ positions s— *implemented in March 2017.*

On the Derivatives market:

- Implementation of the covered sales technology;
- Recording of calendar spreads optimization;
- Delivery modernization (elimination of the over-margining).



Objectives

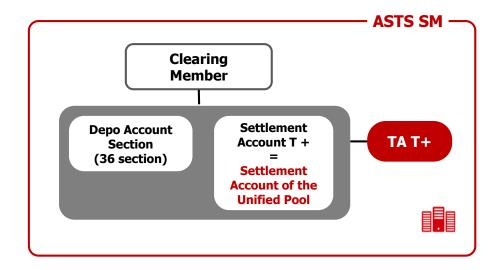
Migration to UP

Migration to the Settlement Account of the Unified Pool



General provisions

- Opportunity to use Unified Pool technologies is provided on the basis of the request submitted by a Clearing member to the NCC
- Settlement Accounts T+ (new or existing ones) are used as Settlement Accounts of the Unified Pool





Questions

Clearing Member actions (1/2)

In order to use Unified Pool technologies:

- A Clearing Member must have registered Settlement Account on the Securities market or register new Settlement Account on the Securities Market
- Assign the feature "Unified Pool" to the chosen Settlement Account:
 - Forward the «Request for assignment the feature Unified Pool to the Settlement Account» via the Clearing Terminal or WEB-clearing
- Forward the «Request for changing the scope of the Settlement Account of the Unified Pool»:
 - a) Containing indication of the relevant Settlement Account, registered for the FX or Derivatives markets (in case of **integration** of the Settlement Account of the Unified Pool with the Settlement Account of the other market)
 - b) Containing indication of the FX market, herewith this Settlement Account, registered on the Securities market becomes available on the FX market (in case if to the Settlement Account of the Unified Pool the market is **added**)
- Request for assignment the feature "Unified Pool" to the Settlement Account at the same time is the application for changing status of the Collateral in foreign currency, recorded under such Settlement Account, to the other collateral.

Management



Objectives

Clearing Member actions (2/2)

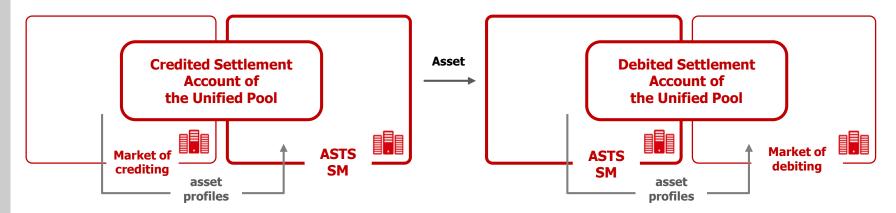
- Depo accounts will be closed, all assets are required to be transferred to the TA of the Securities market (only for the Derivatives market).
- In case of the integration settlement accounts of the FX and Derivatives markets, defined in the application, will be closed.
- Service on balancing risks between Derivatives and FX markets remains available.



Collateral management within the Unified Pool



Procedure for transferring funds between SA of the Unified Pool



Basis: the Request for Collateral transfer, forwarded via trading terminals Spectra, ASTS or the Clearing Terminal

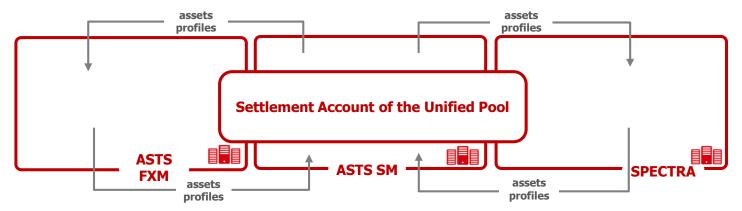
Required to be indicated in the **Request:**

- Credited Settlement Account
- **Debited Settlement Account**
- Currency code / precious metals code
- Amount of cash funds/amount of precious metal to be transferred
- Market of crediting
- Market of debiting
- List of changes under clearing registers on the market of crediting and on the market of debiting (optionally):
 - code of the clearing registers section (for the Derivatives market) obligatory
 - Settlement Account of the 2nd level (for the Securities market / FX 0 market) as an option
 - change (with «plus») of the sum of cash funds on the market of 0 crediting and on the market of debiting



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Procedure for asset profile transfer



Basis: the Request for asset profile transfer, forwarded via trading terminals Spectra, ASTS or the Clearing Terminal

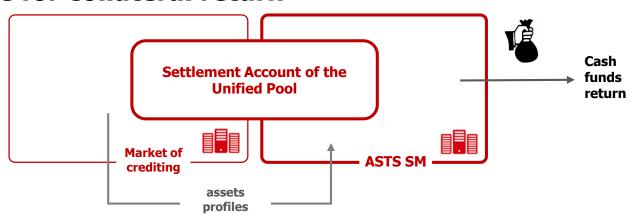
Required to be indicated in the **Request:**

- TA of the Unified Pool, into the structure of which SA of the Unified Pool
- Clearing System of the market, from/to which assets profiles are transferred
- Changes under clearing registers (optionally)
 - SA of the 2nd level (for the FX market and Securities market)/ CSCR (for the Derivatives market)
 - Asset code
 - Change (with "plus" or "minus") of the assets profiles in the clearing system of the market, to/from which assets profiles are transferred

The Request is executed under the condition that its execution will not lead to the fact that a Clearing Member will obtain negative Single Limit or will not have sufficient collateral under the Settlement Account of the Unified Pool on the relevant market



Procedure for collateral return



Basis: the Request for collateral return, forwarded via the Clearing Terminal

Required to be indicated in the Request:

- ✓ Settlement Account of the Unified Pool
- SA of the 2nd level (for the FX market and Securities market as an option) / CSCR (for the Derivatives market at least one obligatory)
- ✓ Amount of cash funds/amount of precious metal
- Relevant feature (in case if it is required to return the whole available amount of cash funds / amount of precious metal)
- Market in case if together with the Collateral return it is required to transfer asset profile ¹

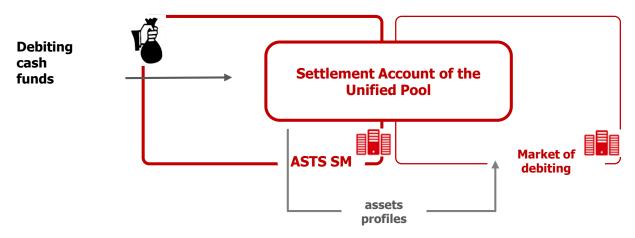
Return to a Clearing Member of Collateral in cash funds/precious metals, recorded under the Settlement Account of the Unified Pool is executed under the condition that the value of the Single Limit in the Clearing Systems of markets, included into this collateral pool, is non-negative



Objectives

^{1 –} only for the Request for collateral return, which contains the amount of cash funds

Procedure for posting collateral



Basis: Payment order

Required to be indicated in the purpose of payment:

- ✓ Settlement Account of the Unified Pool
- ✓ Code word for debiting on the FX/Securities market Code word: "SMCSC/UVR"
- Number and date of the Clearing Membership Agreement, Client section of the clearing register for debiting on the Derivatives market



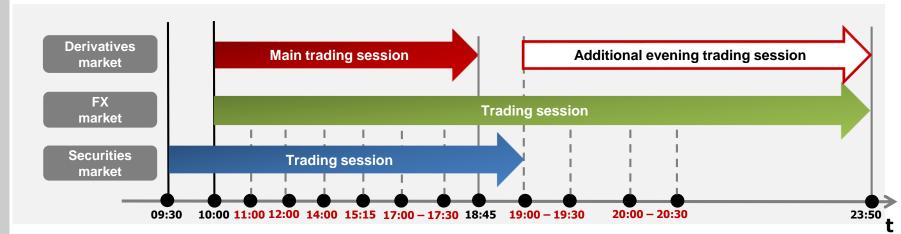
Objectives

Questions

Target changes in the clearing execution regulations



Clearing Time Schedule for Settlement Accounts of the Unified Pool 1



- **11:00 -** Fulfillment of obligations in **tenge**, calculated in the Unified Clearing Pool
- 12:00 Fulfillment of obligations in **yuan**, **Belorussian rubles**, **Hong Kong dollars**, **Swiss francs**, calculated in the Unified Clearing Pool
- **14:00 -** Fulfillment of obligations in **Turkish lira**, calculated in the Unified Clearing Pool
- **15:15** Fulfillment of obligations in **hryvnia**, calculated in the Unified Clearing Pool
- Fulfillment of obligations in **euro and pounds sterling,** calculated in the Unified Clearing Pool
 - Fulfillment of obligations in securities, calculated on the 1st stage of the Unified Clearing Pool establishment
- 17:00-17:30
 Conclusion of REPO trades with a CM in case if there is insufficient amount of securities, calculated on the 1st stage of the Unified Clearing Pool establishment
- **19:00 -** Fulfillment of obligations in securities, calculated on the 2nd stage of the Unified Clearing Pool establishment
- **19:00-19:30-** Conclusion of REPO trades with a CM in case if there is insufficient amount of securities, calculated on the 2nd stage of the Unified Clearing Pool establishment
- **20:00 -** Fulfillment of obligations in **dollar US, Russian rubles and precious metals**, calculated in the Unified Clearing Pool, including obligations to pay fees, forfeits, accrued on the previous Settlement Date
- 20:00-20:30- Conclusion of swap / REPO trades in case if there are obligations in cash funds / precious metals, to fulfill which there is no sufficient amount of cash funds



^{1 –} Any reference to time contained in this document shall, unless otherwise stated, be to Moscow time.

Procedure for settling unfulfilled obligations under TA of the **Unified Pool**

When a Clearing Member does not fulfill obligations under trades, concluded on the Securities, FX and Derivatives markets (including variation margin etc.), the Clearing House concludes with a Clearing Member rollover trades will be concluded.

Specifics:

- Obligations of a Clearing Member are fulfilled using assets, recorded under the TA of the Unified Pool.
- Unfulfilled obligations in securities, cash funds and precious metals will be settled through standard default management procedure (REPO or SWAP trades).
- Rollover trades (REPO or SWAP) are concluded through claims and collateral, recorded under accounts, related to the Unified Collateral Pool.
- If the further roll over of the fulfillment of obligations of a Clearing Member is impossible in accordance with the Clearing Rules, the Clearing House closes out position of such Clearing Member.
- Obligations to pay Russian rubles (variation margin, fee, penalties) on the Derivatives market shall be fulfilled till 20:00, otherwise penalty rate for the debt is applied (for Settlement Accounts, which have not been switched to the Unified Pool, the penalty for the debt in Russian rubles is also implemented).



Objectives

Questions

Road-map/Plan



Road-map

Date	Sub-objectives in-progress
20 March 2017	Unification of settlement on the FX and on the Securities markets
4 December 2017	 transfer of profiles of Russian rubles, foreign currency and precious metals between the Securities and FX markets transfer of profiles of Russian rubles between the Securities and the Derivatives markets unification of assets, accepted as Collateral covered sales on the FX market
May 2018	 2nd stage implementation: transfer of profiles of securities and foreign currency between the Securities, FX and the Derivatives markets (cross-margining of positions among markets) calendar spreads on the Derivatives market covered sales on the Derivatives market margining under a Settlement Account (full net between accounts approach) unification and synchronization of risk parameters changes on the markets of the Moscow Exchange
2018-2019	 3rd stage implementation: modernization of the futures delivery technology on the Derivatives market (in TCS SPECTRA) (2nd stage): waiver of double collateral when delivering client accounts of the 2nd and of the 3rd levels on the Securities market



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Supplements



Supplement 1. Change of the margining rule on the derivatives market

Risks c	alculation rule				
	«Now»	«Netting»*			
SA	 Summation of RMA under SC or optionally Half-netto between different CSCR Half-netto calendar spreads 	 Netting between CSCR Netting between calendar spreads and covered sales 			
SC	Half-netto between different CSCRHalf-netto calendar spreads	Netting between CSCR (optionally)Netting between calendar spreads and covered sales (optionally)			
CSCR	- Half-netto calendar spreads	- Half-netto calendar spreads			
Limits (calculation rule				
	«Now»	«Netting»*			
SA	SA limit = SA assets				
SC	Sum of limits under SC = SA assets	SC limit may be different from SC assets (virtual limit)			
CSCR	CSCR limit may be different from CSCR assets (virtual limit)	CSCR limit may be different from CSCR assets (virtual limit)			



* Within the 2nd stage (winter-spring 2018)

Supplement 2. Example of cross-margining among markets

The example given below has the following specifics:

- Lot of the futures contract on shares of the PJSC «Gazprom» in SPECTRA is equal to one share
- Price of the share of the PJSC «Gazprom» and the Settlement price of the futures contract is 100 rubles per share and are not changed during the whole period given in the example (collateral is not reevaluated, variation margin is not accrued)
- Risk assessment range under shares of the PJSC «Gazprom» in the ASTS SM [80;120]
- Required Margin Amount in the SPECTRA under the futures contract on Gazprom shares is 20%
- In the SPECTRA system the 2nd stage of the project "Unified Collateral Pool" is implemented:
 - profiles of securities transfer \circ
 - new calendar spread 0
 - covered sales \bigcirc
 - modernized delivery 0
 - net margining under the SA

Migration to UP

Interest rate risks are not taking into account (considered to be equal to zero) when calculating Single Limit in the ASTS SM and Free Total Required Margin Amount (FTRMA) in the SPECTRA.



Objectives

Funds transfer, assets profiles transfer, trades conclusion

Transfer of Collateral to the ASTS SM by a Clearing Member (40 rubles)

Day T. Trading	I	SM	Rubles	GAZP
_	+40	Funds	→ 40	0
		Obligations	0	0
		Assets profiles	0	0

Collateral debited to the ASTS SM

DM 🛅	Rubles	GAZP
Funds	0	0
Obligations	0	0
Assets Profiles	0	0

Single Limit = 40

Collateral = 0

Transfer of assets profiles to the SPECTRA by a Clearing Member (20 rubles)

SM	Rubles	GAZP
Funds	40	0
Obligations	0	0
Assets profiles	-20 _	0

Transfer of an asset profile (rubles) to conclude futures contract in the SPECTRA

DM 📑	Rubles	GAZP
Funds	0	0
Obligations	0	0
Assets profiles	2 0	0

Single Limit = 40-20 = **20**

Collateral = 20

Purchase by a Clearing Member of Gazprom shares (20 rubles of Collateral required) and sale of the futures on Gazprom share with the closest execution (20 rubles of Collateral required)

SM	Rubles	GAZP
Funds	40	0
Obligations T+2	-100	1
Assets profiles	-20	0

Sale of the futures contract on GAZP in the SPECTRA Conclusion of the Trade T+2 Purchase of 1 GAZP share in the ASTS SM

DM 📑	Rubles	GAZP
Funds	0	0
Obligations	100	-1
Assets profiles	20	0

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Single Limit = 40-100-20+1*80 = 0

Collateral = 100+20-1*120 = 0

Settlement in the ASTS SM

Transfer of assets profiles (of rubles and Gazprom shares) between the ASTS SM and the SPECTRA by a Clearing Member for cross-margining

SM	Rubles	GAZP	Transfer of an asset profile	DM	Rubles	GAZP
Funds	40	0	(rubles and GAZP) between	Funds	0	0
Obligations T+2	-100	1	the ASTS SM and the SPECTRA for	Obligaitons	100	-1
Assets profiles	100	-1	cross-margining	Assets profiles	-100	1

Single Limit = 40

Collateral = 0

Day T+2: transfer of Collateral (60 rubles) to the ASTS SM by a Clearing Member in order to fulfill obligations under Trade T+ to buy Gazprom shares

	SM	Rubles	GAZP
	Funds	40+60	0
+60	Obligations T+0	-100	1
	Assets profiles	100	-1

Debiting cash funds to the ASTS SM for settlements

DM 📑	Rubles	GAZP
Funds	0	0
Obligaitons	100	-1
Assets profiles	-100	1

Single Limit = 100

Collateral = 0

Day T+2: clearing, receipt of Gazprom shares by a Clearing Member

SM 🔝	Rubles	GAZP
Funds	0	1
Obligations T+0	0	0
Assets profiles	100	-1
Single Limit = 100		

Clearing

DM	Rubles	GAZP
Funds	0	0
Obligations	100	-1
Assets profiles	-100	1

Collateral = 0



Instruction to withdraw 1 GAZP share will not be processed as after 1 GAZP share withdrawal the Single Limit = 100 - 1*120 = -20

Settlement in SPECTRA (after implementation of the 2nd stage of the project "Unified Pool")

Day T+n: Before the futures contract settlement (state equivalent to the point 6)

SM	Rubles	GAZP
Funds	0	1
Obligations T+2	0	0
Assets profiles	100	-1

Single Limit = 100

DM	Rubles	GAZP	
Funds	0	0	
Obligations	100	-1	
Asset profiles	-100	1	

Collateral = 0

Day T+n: Settlement of the futures contract on Gazprom shares sale by conclusion of the Trade T+ in the ASTS SM, automatic transfer of reverse assets profiles (rubles and Gazprom shares) between the SPECTRA and the ASTS SM

SM 📑	Rubles	GAZP	Conclusion of the Trade T+ transfer	DM	Rubles	GAZP
Funds	0	1	of reverse assets profiles (rubles	Funds	0	0
Obligations T+2	100	<u>-1</u>	and GAZP) between the	Obligations	0_	o
Assets profiles	0 📥	0	SPECTRA and the ASTS SM	Assets profiles	0_	o

Single Limit = 100

Collateral = 0

Day T+n+2: Fulfillment by a Clearing Member of obligations under Trade T+, concluded to settle futures contract. Clearing

SM []	Rubles	GAZP
Funds	100	0
Obligations T+0	0	0
Assets profiles	0	0

Clearing

DM	Rubles	GAZP	
Funds	0	0	
Obligations	0	0	
Assets profiles	0	0	

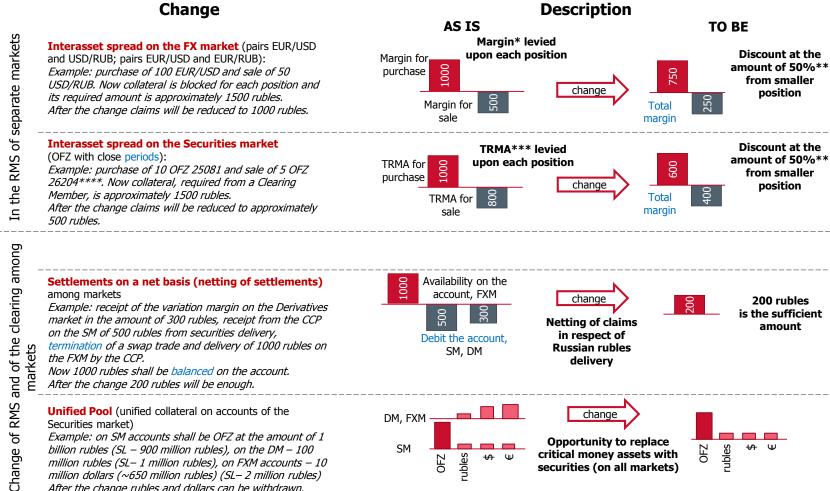


Single Limit = 100

Collateral = 0

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Supplement 3. New service implementation effect



Securities market)

Example: on SM accounts shall be OFZ at the amount of 1 billion rubles (SL - 900 million rubles), on the DM - 100 million rubles (SL- 1 million rubles), on FXM accounts - 10 million dollars (~650 million rubles) (SL- 2 million rubles) After the change rubles and dollars can be withdrawn.



- * Margin total required margin amount
- ** Particular value of the discount may vary depending on the assets
- *** When the spread on OFZ is actually recorded, correction coefficients, which give premium to the net position, are takin into account
- **** redemption on 31.01.2018 and 15.03.2018 correspondingly



Objectives

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Supplement 4. Clearing Terminal

- Modern convenient graphic web-interface, user-friendly
- Availability of the program interface (WEB API)
- Focused on work with clearing objects (not transactions)
- Unified system for all markets of the Moscow Exchange
- Implementation of the automatic processing of the majority of requests, forwarded by a Clearing Member to the NCC
- Two-factor authentication: key certificate of the EDI + login-password
- Implementation of the opportunity to sign documents with two signatures
- Messages in the xml format
- High speed of the system response
- Capacity of the batch requests processing
- **Opportunity to prepare documents patterns for the standard requests**

Management



Questions

Supplement 5. UCW, WEB-clearing, Clearing Terminal

Development of the service of informational interchange between the NCC and a **Clearing Member**



Opportunities	UCW	WEB- clearing	Clearing terminal
Modern Web-interface	-	+ -	+
WEB-API	-	-	+
Object model	-	-	+
Unified system for all markets	-	+ -	+
High speed of response	-	+	+
Signing documents with 2 signatures	-	+	+
Messages in the xml format	-	-	+
Batch requests processing	-	+	+
Patterns	-	+	+



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F.A.Q. (1/2)

1. How to start use of Unified Pool service?

In order to connect the service it is required:

- A) to open or choose SA T+ on the SM
- B) to submit the application to the NCC on assignment of the feature Unified Pool to the chosen SA
- C) to submit the application to the NCC with the indication of the Settlement Account of the Securities, FX and Derivatives market in order to link them in the SA of the Unified Pool.

2. How many Settlement Accounts can be united into the Unified Pool Settlement Account?

There is no restriction on the number of Settlement Accounts. However the SA of the Securities market must be the part of the Unified Pool SA. Only SA of one type can be combined into the Unified Pool (client, proprietary or trust).

3. Is it possible to combine into the Unified Pool Settlement Accounts of different legal entities of one group? No, such combination is impossible due to the legislation requirements.

4. Which difficulties may arise on the conversion day?

Impossibility to post/withdraw assets on the Derivatives market on the transmission day, necessity to withdraw all securities from depo accounts of the Derivatives market.

5. What will happen to depository sections on the Derivatives market?

Within the Unified Pool SA the collateral will be kept on the SA of the Securities market, so there will be no need in depo sections on the Derivatives market, they will be closed.

6. Which terminal is required for managing collateral within the Unified Pool?

Collateral transfer transactions in the Unified Pool will be available via the trading terminals of Securities, FX & Derivatives markets, and also via the Web-clearing.

7. In what way the collateral shall be posted into the Unified Pool?

Collateral in cash funds / precious metals / securities is posted upon the Settlement Account / Unified Pool TA on the Securities market. When posting cash funds, in the payment purpose the code word of the relevant market can be indicated, but for the Derivatives market CSCR, for the concurrent asset profile transfer to this market.



Supplements

F.A.Q. (2/2)

8. Is it possible to return funds concurrently with the asset profile transfer from FXM and DM?

Yes, it is. When returning funds from the UP SA, for the simultaneous asset profile transfer from the FXM or the DM to the SM the relevant market shall be indicated. If desired for the FXM the SA of the 2nd level may be indicated, for the DM CSCR must be indicated.

9. How is netting of settlement executed?

All settlement (including obligations from the FX and Derivatives market) for the SA of the Unified Pool are executed in the ASTS of the Securities market. Clearing session time (mark-to-market) in respect of the UP SA is not changed and corresponds to the Time specifications of the relevant market.

10. How do the covered sales function?

Covered sales function via the profile transfer of the relevant asset on the Derivatives market, through netting with the similar futures position.

11. How will the trading schedule be changed?

Trading schedule will not be changed.

12. Will the system of default funds and collateral for stress be subject to change?

The system of default funds and collateral for stress will not be changed.

13. In which way the delivery procedure from the Derivatives market to the Securities market will be changed?

On the 1st stage delivery procedure will not be changed, any TA can be used for the delivery. On the 3rd stage the following options will become available: 1) delivery on the TA, which refers to the UP SA, meanwhile double margin requirement will not emerge; 2) delivery on the TA, which does not refer to the UP SA, however double margin requirement will emerge.

14. Which assets will be accepted as collateral for the Unified Pool SA?

Assets, accepted as collateral on the SM, FXM and DM, will be accepted as collateral for the Unified Pool SA.

15. How the procedure for making Margin call will be changed?

Making Margin call on each market within the Unified Pool SA will be independent.

Making Margin call on one market within the Unified Pool SA will not affect on other markets activity.



Objectives