

Approved By order of the president
of Caspy Commodity Exchange JSC
dated September 16, 2019

**Requirements to the hardware and software complex of the
Clearing Centre
of Caspy Commodity Exchange JSC**

Chapter 1: General requirements

1. These Requirements to the hardware and software complex of the clearing center of Caspy Commodity Exchange JSC (hereinafter - Requirements) are developed in accordance with the Rules for Clearing Activities under Exchange Trades and Requirements to the Hardware and Software Complex of the Clearing Center of the Commodity Exchange approved by the Order of the Acting Minister of National Economy of the Republic of Kazakhstan dated November 25, 2015 No. 729.

2. Basic concepts that are used in these Requirements:

1) hardware-software complex (hereinafter - HSC) - a set of software and technical means jointly used to solve tasks of a certain type .

Chapter 2: Requirements

1 The hardware and software complex of the Clearing Centre shall consist of workstations (computer base), server hardware, software, and shall ensure

1) reliable storage of information, protection against unauthorized access, integrity of databases and complete preservation of information in electronic archives and databases at:

complete or partial power failure on any part of the software at any time;

failure of networks, telecommunications, breakdown of established physical and virtual connections at any stage of data exchange operation;

attempted unauthorized access to software information;

2) multi-level access to input data, functions, operations, reports implemented in the software. The software shall provide for at least two main levels of access: "administrator" and "user";

3) control over completeness of entered data (in case of performing functions or operations without completely filling in all fields, the program ensures issuance of a corresponding notification);

4) search for information by individual request and by any criteria, as well as sorting information by any parameters and the ability to view information for previous dates;

5) processing and storage of information by dates without abbreviations;

6) automated generation of report forms established by regulatory legal acts, as well as notifications, certificates, personal account statements, reports on transactions performed and documents confirming the performance of information operations;

7) archiving capability (restoring data from the archive);

8) the ability to output output documents to the screen, printer or file;

9) the possibility of exchanging electronic documents;

- 10) uninterrupted and uninterrupted operation in case of software failures;
- 11) automated collection, processing and storage of information on trades for which the clearing organization provides clearing services, its reconciliation and adjustment;
- 12) accounting of parameters of all concluded trades in the trading system at the Commodity Exchange accepted for clearing service;
- 13) generation of the report on results of clearing activities for the commodity exchange members;
- 14) automatic performance of the following operations through integration with the commodity exchange trading system:
 - separate accounting of commodity exchange member's funds;
 - blocking of the commodity exchange member's funds based on the results of transactions and removal of blocking as a result of their execution;
 - admission of commodity exchange members to trading;
- 15) safety of the commodity exchange member's changed data and search of the registered person using the former data;
- 16) safety of information on all operations conducted on the clearing accounting register for the whole period;
- 17) transfer of information to clients, settlement organizations, the Commodity Exchange and the Authorized Body via secure communication channels using electronic digital signature;
- 18) identify the fact of receipt of the document from the person authorized to give orders for execution of operations on the clearing register opened by him;
- 19) performance of operations on the clearing accounting registers only on the basis of the orders of the authorized persons;
- 20) maintenance of an arbitrary audit log in the process of software operation.

2. Information safety of the hardware and software complex of the Clearing Centre shall be ensured by daily automatic saving of the backup copy of the database and the system transaction log on the additional server.

3. Protection of the Clearing Centre's information is provided by the main access levels - "administrator" and "user":

- 1) access level - "administrator" includes:
 - defining user groups, categorizing them by their functions and setting them access levels to information, changing passwords;
 - blocking user access to data and software functions; setting up the parameters of software operation; view the users connected to the software database; opening (closing) of the operational day;

disconnecting users from the software database if necessary;
work date change;

creation of archive and backup copies on removable long-term storage media;

2) level of access - "user" includes:

periodic updating of reference information in the software database;

entering data into the software;

carrying out certain operations with customer funds in the software;

generation of reporting (output) forms;

storing the necessary information;

printing of reports and output documents.

4. Each user of the software can log in with an individual password. For the access level "administrator" it is possible to change passwords. Access to input data, functions, operations, reports is provided by entering the appropriate password, which is changed at least once every thirty calendar days.

5. It is not allowed in the software (regardless of access level):

1) maintenance of means allowing to perform certain functions and operations in violation of the established procedure for their performance;

2) have functions that allow direct changes to the data of generated output documents;

3) change (deletion) of the data on the executed operations and on the state of the clearing accounting registers, except for the operations (functions) specially designed for this purpose.

6. Upon performance of the operations the Clearing Centre's Software shall notify the Clearing Centre of the occurrence of the following conditions:

1) the amount of funds to be written off from the clearing accounting register exceeds the amount of funds on it;

2) violation of the terms of execution of transactions;

3) the clearing accounting register from which the funds are debited is blocked.

7. The following requirements shall be met by the Commodity Exchange Member - user of the hardware and software complex of the Clearing Centre:

1) antivirus software with regularly updated antivirus database and automatic downloading of system updates of the operating system is installed on the user's workplace;

2) on the user's personal computer used for conducting operations, it is not allowed to install software tools that are not designed for solving the tasks of preparation, processing, transmission or maintenance of electronic documents;

3) one system user name, by which the user is identified when logging

into the program environment, corresponds to one physical person.

8. To ensure uninterrupted and continuous operation of the hardware and software complex, the Clearing Centre shall provide for at least two uninterrupted power supply sources, one of which shall be used as the main one, and the rest - as backup ones, or a single uninterrupted power supply source, with a backup generator ready for immediate activation.

9. The server hardware of the Clearing Centre shall have the reserve equipment ready for immediate activation in case of damage, destruction or impossibility to use the main equipment. The room with server hardware shall be equipped with an access control system.