Doc	Type	Announcement
	No	2017/32
	Subject	Updates in Document namely Changes and New Functionalities in VIOP Operations with BISTECH System
	Apr. Date	17/02/2017
	From	Financial Derivatives Market Department
	To	Members

Dear Member,

Ref: a) The announcement numbered 2016/68 and dated 04/08/2016.
     b) The announcement numbered 2016/22 and dated 17/02/2017.

With the Announcement in reference a), it is stated that Borsa İstanbul Derivatives Market system will turn into BISTECH system and in this context, "Changes and New Functionalities in VIOP Operations with BISTECH System" document has announced by planning introduction of new applications related to market rules and cancellation of some existing applications. With the Announcement in reference b), in the direction of the tests and studies related to the transition, the updates made in the related document have been announced.

At the current point, "Changes and New Functionalities in VIOP Operations with BISTECH System" document was updated in accordance with changes, which are told at the meetings with all members and face-to-face meetings related to BISTECH system, specified in the "Changes Made On Document" table.

The updated version of "Changes and New Functionalities in VIOP Operations with BISTECH System" is at the attachment and also it can be reached by the following link: http://www.borsaistanbul.com/docs/default-source/nasdaq-dokuman/viop-changes-and-new-func-EN.pdf?sfvrsn=8

Please be informed and take the necessary actions.

Regards,

Osman SARAÇ
CEO

Attachment: Changes and New Functionalities in VIOP Operations with BISTECH System (87 pages)

Changes and New Functionalities in VIOP Operations with BISTECH System

Derivatives Market

March 2017

Version: 2.1

CONTENTS

CHANGES MADE ON DOCUMENT

VERSION	DATE	CHANGES
1.0	18/07/2016	First Writing
1.1	06/09/2016	Translation to English
2.0	17/02/2017	• It is stated that the OUCH protocol will be activated at go-live. • Session times have been updated according to current system. • Explanation about price statistics in standard strategy contracts is added. • Explanation about contracts that may be linked to condition in stop orders is added. • An update is done in calculation period of temporary settlement prices. • "Position Closing Option of Accounts in Order Entry" section has been added. • Contract hierarchy table is updated. • "VIOP_YAYIN" session configuration is added to session configuration table. • Principles of market order functioning have been updated. • Pre-Trade Risk Management section has been updated. • Market Makers' Assessment section has been updated. • A new chapter has been added on corporate action. • Updates have been done in ''Amendment Allowed on Orders and Time Priority'' section.
2.1	**01/03/2017**	**• In the ''Introduction'' section, explanations are added that the physically delivered futures and options contracts' settlement period will be changed from T+3 to T+2, and the account update operations will be done at the end of T day instead of T+1.** **• "Price Margins and Price Limits" section has been amended. "Daily Price Change Limits" was added to attachments.** **• The explanation about the option creation rule is added to the section titled "Different Strike Prices per Option Expirations".**

1 PREFACE

All markets operated by Borsa Istanbul will be moved to a single trading platform as a result of the strategic cooperation agreement signed on 20/01/2014 between Borsa Istanbul A.Ş. and NASDAQ. Equity Market has been moved to the new trading platform called BISTECH (Nasdaq Genium Inet Trading System developed for Borsa İstanbul) on 30/11/2015 as the first phase. Derivatives Market shall be moved to BISTECH trading platform as the second phase.

Changes in the new structure are explained in detail in the following sections and the documents attached hereto.

Functional changes in the new structure can be summarized below:

- Instrument hierarchy will be changed.
- There will be some changes in contract codes.
- Market structure will change.
- Strike prices may differentiate with maturity.
- Daily price limits methodology will change.
- Temporary settlement prices that are calculated in every 10 minutes and used for calculating temporary profit/loss in the current system will be published following the risk applications which run in every hour.
- Cumulative price depth information will be 25 levels.
- Number of open interest information which is disseminated real-time intraday in the current system will be updated once in a day.
- «Trade reporting» will replace «neg-deal orders».
- Orders can be withdrawn by inactivation.
- Batch order files will be removed. However, users can save the orders into their local terminal by using inactive order entry function, and then send the orders to the trading system quickly.
- Instruments in BISTECH system will be traded in two different partitions. Two separate FIX Order Entry connections will be required to send orders to all instruments.
- The OUCH protocol, which enables faster command delivery, and the ITCH protocol, which enables faster data flow, will be available.
- Give-up except for "give-up at order entry" option will be available.
- Risky account procedure will be changed. Risk levels, risk decreasing orders and order check procedure for risky account will be given up.
- Erroneous trade correction will be changed. Corrections may be done via Clearing Offices in terms of trade, not order.
- **Premium receivables and profits are transferred to the accounts on T + 1 day while premium liabilities and losses are collected from the accounts within the scope of the account update operations in the current system. Within the scope of account update operations in the BISTECH system, premium liabilities and losses will be collected at the end of the day T and the premium receivables and profits will be transferred to the accounts at the end of the day T.**
- **The physically delivered equity futures and options contracts settlement period will be changed from T+3 to T+2.**

Some features in new system infrastructure which will be not launched at go-live are stated below:

- After Hours Trading,
- Standard strategy (roll-over combinations) contracts,
- User-defined flexible contracts,
- Exchange defined limits in risk group controls and margin requirements,
- Cascading in power contracts,
- Combination contracts,
- Daily and weekly contracts,
- Linked orders,
- OUCH Protocol,
- Advertising orders,
- On-close orders,
- Session orders,

2 CHANGES AND NEW FUNCTIONALITIES WITH BISTECH

2.1 After-Hours Trading

Continuous matching session in the existing system, which is held between 09:30-18:15, can be extended up to 20 hours per day through morning and evening off-hour sessions with BISTECH trading platform.

Further details regarding structure of morning and evening sessions are given in Annex-1.

After-Hours trading will not be implemented initially.

2.2 Instrument Hierarchy and Market Structure in BISTECH System

Instrument hierarchy will be changed. The table below shows the hierarchy of instruments in the new system.

In existing system Trades can be executed on three different markets called Main Board, Negotiated Deals Board and Advertising Board. In the new system there will only be "Derivatives Market".

2.3 New Instruments

2.3.1 User-Defined Flexible (Tailor Made) Contracts

Exchange members will be able to create flexible contracts intraday by altering (i) expiration date and/or (ii) strike price parameters of existing contracts traded in BISTECH system with predefined constraints. Flexible derivative contracts will be tradable same day after creation.

- Flexible contracts can be created by trading workstation (TW) users authorized as chief-broker and FIX OE users in continuous matching session. (VIOP_SUREKLI_MZYD)
- Limits for expiration date and strike prices are determined based on tradable exchange-defined option contracts. Strike price lower (upper) limit for flexible options can be below (above) minimum (maximum) strike price of tradable standard option contracts from all maturities by a parameter amount set by Exchange. Expiration date of flexible contracts can exceed furthest maturity of tradable standard contracts by a parameter amount set by Exchange.
- User defined flexible contracts will not be allowed to trade (VIOP_ARA) until regarding risk files and ISIN codes are generated by Exchange. Once those procedures are succeeded they will be activated automatically.
- Contract code of flexible options will be composed of the following fields:

      TM_O   : Type of contract (Flexible option)
      XXXXXX   : Underlying asset
      Z   : Exercise style (A=American E=European)
      DDMMYY   : Expiration date
      M   : Option class (C=Call P=Put)
      YYYYY   : Strike price
      Example   : TM_O_USDTRYKE181016P3000

- Strike prices of flexible options may be defined different than strike price tick of exchange-defined option contracts as long as minimum price tick condition is met. For instance, it is possible to create 91,525 index or 2911 currency strike prices for flexible options.

Flexible contracts will not be implemented initially.

2.3.2 Daily and Weekly Contracts

BISTECH system will allow daily and weekly contracts having similar contract specifications (price tick, price limit, strike price, etc…) with monthly contracts. Expiration date of daily/weekly contracts might be set until three business day before the expiry date of monthly contracts.

Contract code of daily/weekly futures will be composed of the following fields:

      F_   : Type of contract (Futures)

XXXXXX   : Underlying asset
DDMMYY   : Expiration date
Example   : F_USDTRY181016

2.3.3 Cascading Contracts

Cascading means that futures contracts with longer delivery periods are substituted at expiry with equivalent contracts having shorter delivery periods. After BISTECH migration it will be possible to introduce cascading power contracts.

On the contract last trading dates every position in yearly futures contracts is substituted with equivalent positions in monthly futures for January, February and March, as well as in quarterly futures for the second, third, and fourth quarter of the year. The same cascading occurs for quarterly futures contracts; that is, on the last trading day of the quarter, every position in quarterly futures is substituted with equivalent positions in monthly futures whose delivery periods comprise the quarter. Positions are closed at the same price for the yearly or quarterly future, and the equivalent new positions are opened at the same price.
Cascading contracts will not be available at go live.

2.3.4 Standard Strategy (Combination) Contracts

After BISTECH migration, standard strategy contracts which allow traders to trade in two nearest month contracts with one single order will be available.

A combination order book is made up of multiple single order book "legs". Standard strategy contracts are exchange-defined contracts to sell the nearest month future contract and buy the second nearest month future contract of the same underlying.

Investors who want to send orders to the standard strategy contracts should take into account the price difference (spread) between two months. Orders will be priced as:

(Second Nearest Month Price (M2)) - (Nearest Month Price (M1))

M2 and M1 are called legs and buying the combination equals a buy in leg A and a sell in leg B) simultaneously. Selling the combination will always mean the opposite.

Users can send their orders to standard strategy contracts via FIX Order Entry and Trading Workplace (TW) users.

Contract code of standard strategy contracts is composed of the following fields:

F_   : Type of contract (Futures)

XXXXXX   : Underlying
M2-M1   : General expressions to indicate of buying the second nearest month (M2) selling the nearest month (M1)

Example   : F_USDTRYM2-M1

A trade in standard strategy contracts means one trade in each leg.

Trade information and statistics of standard combination trades will be published under the single leg's contracts. First, matching engine try to match combination orders with single leg's orders which satisfy the spread price. If the spread price cannot be met from the legs, ME try to match the order with a counter combination order. If combination orders are matched against other combination orders, ME automatically creates trade prices for the legs according to spread price. Automated trades generated by the system will not be reflected in price statistics such as the latest-lowest-highest in the near-term / long-term contracts, but only on the quantity and volume statistics as in the case of trade reporting. Standard strategy contracts can have negative price values. Further details regarding standard strategy contracts are given in Annex-7.

Price limits for standard strategy contracts is calculated by the following formula:

Lower Limit = (Second Nearest Month's Base Price – Nearest Month's Base Price) – k
Upper Limit = (Second Nearest Month's Base Price – Nearest Month's Base Price) + k

Factor k is identified according to contract's underlying and it is planned to define as 10 for BIST30 Index, 0.5 for USDTRY and 50 for USD/Ounce Gold Futures contracts. Since the price limits for strategy contracts will be calculated in real time, they will not published from TWs or FIXRDs.

Standard strategy contracts will not be implemented initially.

2.3.5 User-Defined Strategy (combination) Contracts

After BISTECH migration, participants will also be able to create their own combination contracts alongside with exchange defined standard contracts. Users will be able to trade their strategies under a single order during continuous trading session with these contracts.

These contracts may be consist up to 4 legs and traders should send their orders to them with a single spread price. Trades from a user-defined strategy combination will occur automatically once the counter orders of the single legs or a counter strategy order is found. Users can create their strategy contracts via FIX OE or TW.

Users are not allowed to create a strategy contract with contracts from different markets or contracts from the same market but with different underlyings. The only exception to this case is, users will be able to create strategy contracts consist of the equity contracts within the same partition even if their underlyings are different. Additionally, contracts in a user-defined strategy contract should have the same price decimal.

The matching logic for user-defined strategy contracts is the same with the standard strategy contracts. The major difference between them is user defined strategy contracts will be deleted from the system at the end of the day.

Contract code of user-defined strategy contracts is composed of the following fields:
TMC_ : Type of contract (User-defined strategy contracts)
XXXXX_   :1. Underlying asset code
YYYYY_   : Underlying (if there is any)
ZZZ   : General number given by the system

Example   : TMC_USDTRYK_001

User-defined strategy contracts will not be implemented initially.

2.4   Duration of Orders

In the current system, a session order and a day order are same and they are valid until 'VIOP_GUNSONU' and 'VIOP_GUNSONU_N'. And, a session order may not be converted into a date order whereas a day order may be converted into a session order, preserving its priority. In BISTECH system, it is allowed to extend the duration of an order. On the other hand, in the new system an order will lose its priority when its duration is extended, while it will preserve its priority when its duration is shortened as it is in current system.

2.5   New Order Types

2.5.1   On Close Orders (KAP)

It is the order method to buy or sell a stated amount of contracts at the settlement price determined in the closing session (VIOP_KAP_ESLESTIRME). Once the settlement price is calculated, "on-close orders" shall be matched with other pending "on-close orders". After the "on-close orders" pending at buy and sell sides are matched and remaining unfulfilled "on-close orders" shall match with the normal session orders that meet the settlement price. On close orders should be entered to the system by using these fields: Validity: "Fill and Kill", Type: "Market" and State:"KAP". Unmatched on close orders are cancelled at the end of session. On-close orders will not be implemented initially.

2.5.2   Market to Limit Order

These are the orders entered stating only the quantity without any price. Such orders are executed by matching only the pending orders at the best price at the other side. However, the part of the order not executed will be converted into a limit order at the latest trading price realized, and written in the order book as a passive order (except when it is entered as fill and kill order).

2.5.3   Linked Orders

After BISTECH migration, users will be able to send linked orders with same quantity to support their trading strategies to trade either "one or the other" of max 10 instruments. Linked orders will be stored in the order book with an indicator identifying that they are "linked".

Every match on a linked order results in decrementing a proportional quantity in all its linked legs. If one of the order books containing a linked order enters into a no-matching state, or one of them is cancelled for any other reason the whole linked order will be automatically canceled by the system. Linked orders may only be sent to the system via TWs and should have Limit, Day, FaK or FoK attributes. All legs of a linked order share the same order number and they can be seen in related contract's order book. Linked orders cannot be submitted by FIX OE but FIX DC users will get the related order messages. Contracts in a linked order should trade within the same partition and they are subject to the same price limit rules for the contract.

Linked orders will not be implemented initially.

2.5.4 Session Order

Session orders are centrally stored contingent orders that are triggered by a session state with a certain state type. The order is entered with a state type and will be triggered when the instrument enters a session state defined as the state type specified in the order. After the Session state order is triggered it is handled as a normal order and valid according to the specified order validity.An untriggered Session state order is always removed next day.

Session orders will not be implemented initially.

2.5.5 Advertising Orders

Advertising orders may be used when one side of the trade report is definite. These orders can be entered via normal order entry screens from Trading Workplaces. Advertising orders are subject to the same rules with trade reports. These orders will be published to the market in advertising order book screen. When a counterparty hit, orders are matched with the full quantity. Advertising orders can only be entered via trading workplaces. Implementation of price and time priority rule at the Negotiated Deals Advertising Board is subject to the rules specified below:
a) Price and time priority rule shall prevail when there is more than one advertising order at identical volumes.
b) In case of existence of multiple advertising orders at different volumes, price and time priority does not apply.

Advertising orders will not be implemented initially.

2.6 Stop Orders (Conditional orders)

These are the orders which are activated when the last price, best bid price or best ask price of a contract (trading in the same partition), reaches to a certain pre-determined level.

2.7 Systematics of Order No and Trade No

Currently order no is in YYYYMMDD0000001 format. In BISTECH system order no does not include date. It will be unique in terms of partition, order book and buy/sell side and will be 64 bit. Trade no will be unique and ranking in terms of partition.

Uniqueness of an order depends on 3 parameters:

1) Contract (that the order is entered)
2) Side of order (buy/sell)
3) Order number

Example:

Order No: 5B6866C1:00002801
Trade No: 09240A4100000001

2.8   Order Inactivation

Users can inactivate their orders by using TW (Local inactivation). Inactive orders can be reactivated during the day by users. On the other hand if configured, all orders can be inactivated automatically in case of connection loss (Central Inactivation). Central Inactivation functionality can be used upon member request. Cancelation and Inactivation of orders are equal for the system. Reactivated orders lose their time priority and get a new order no. Only TW users can use local inactivation functionality. Messages regarding inactivated orders are sent to FIX drop copy users. Inactive orders can be prepared and sent by TW users during the day.

2.9   Trade Reporting

In current system there is negotiated deals for high quantity trades but with BISTECH system Trade Reporting will be used for these kind of deals. Exchange members may send their buy and sell orders, matching in quantity and price from the same or different customers for the contracts, within the price and quantity limits. They are allowed to report such deals to be executed to a trade before transmitting them to the order book. Approval of trade reports is configurable. Trade reports can be approved automically or need to be approved by Exchange. If approval must be done, Exchange will do the necessory controls.

Trade reports and related statistics will be announced under the title of trade report separately from the trades realized in the order book. With the new system trade reports can be executed by FIX order entry users.

Detailed information on the trade reporting are listed in Annex 3.

2.9.1 Single Sided Trade Reporting

It is used when trade sides are different members. One counterparty enters the details of the trade including, side, quantity, price, account no and the counterparty code. The other counterparty confirms the trade with the account info.

2.9.2 Double Sided Trade Reporting

In case both buyer and seller are the same member, all details of the trade can be reported by the same member.

2.10 Pre-Trade Risk Management

BISTECH PTRM is integrated with the Trading and Clearing platforms to provide pre-trade and at-trade risk management. PTRM, offers the Exchange and its members the ability to control the risk arising from both orders and trades. Detailed information for PTRM is given in Appendix 4.

2.11 Give-Up

This is the transfer of a position belonging to a trade carried out by a member to another member. It is possible in three ways:

- At Order Entry: The member from whom the position will be transferred through TW and FIX will be specified. After the trade is carried out, the member who received the transfer should take-up on the side of Takasbank Clearing Workstation.
- Post trade: Give-up and take-up over the trade on the side of Takasbank can be implemented after the trade is carried out. This can be performed after trade is carried out until end of T+1 day.
- Automatic give-up: Upon agreement of two institutions and as a result of definition to be conducted within the System, all of the trades carried out by a member is transferred to the other institution for clearing. The member taking over should be a General Clearing Member at Takasbank.

Give-up function will not be in effect at go-live. Rules and details regarding give-up will be also announced by Takasbank.

2.12 Partitioning

Partitioning structure that applied in Equity Market with Phase-1 implementation will be valid for Derivatives Market (VIOP) as well. Accordingly, VIOP partitioning is designed as following:

Group-1:   Futures and options contracts on AKBNK-ARCLK-EKGYO-EREGL-FBIST-GARAN-HALKB-ISCTR underlyings

Group-2:   Other futures and options contracts that do not belong Group-1

If there is a requirement to update described groups because of load-balancing or other mandatory reasons, relevant change will be announced to our members within a reasonable time.

FIX OE (order entry), FIX DC (drop copy) and OUCH channels must connect to each group separately in a session. Group information of traded contracts is provided by Security Definition Message in FIX RD (reference data) channel. Order messages for a contract can be sent/received only by using correct group channels.

2.13 Orders Outside the Price Limits

Orders inside price limits of relevant sessions are accepted by the system with "New" status. With new system, one-sided price limits will be used. Bid orders which have lower prices than lower price limit and ask orders which have higher prices than higher price limit will be accepted with "Paused" status. Status of the orders whose price falls outside price limits after price limit

changes will be changed to "Paused" by the system and status of paused orders whose price falls into price limits after price limit changes will be changed to "New" and written into order/price depth.

2.14 Mass Order Cancellation

Users can cancel own orders and all orders from other users of the same member (in case user has the authorization). Cancel transaction may be made on basis of market, board or underlying asset via TW.

3 FUNCTIONALITY AND SYSTEM CHANGES

3.1 User Types and Characteristics:

Trading Workstations (TW):

TW utilization will continue at member premises. Order entry capacity of these users are determined as 10 orders per second (including amendments and cancellations). This figure is parametric and can be changed with prior announcement by the Exchange. There is no requirement to have two separate connections to two separate partitions on the TWs. Single user can provide connection to both partitions by single connection. Trader (broker) and firm manager (chief broker) users will be available in new TWs as it is currently. Unlike chief brokers, brokers will not be able to create flexible contracts in the New System. In addition to that, chief brokers will be able to amend and cancel orders entered by the brokers of their firms.

FIX:

FIX protocol is used for 3 purposes in BISTECH system:

- FIX Order Entry: It is used for order, quotation entry as in the current structure and for trade reporting additionally. At least two FIX connections are required for each member in order to access all instruments on both partitions. It can be used from co-location and remote access points as in the current structure. FIX capacities are to be announced.
- FIX Reference Data: FIX connection provides reference data on instrument basis with following messages:
    - Security Definition message: includes reference information in the beginning of the day regarding the related instrument,
    - Security Definition Update message: gives updates within the day,
    - Security Status message: gives info on session changes,
    - Price Reference message: comprises price information,
    - Trading Session List message: includes information on trading sessions information in the system,
    - MM ATM message: declares the list of at the money option contracts for market makers.
  Unlike FIX Order entry connection, partitioning structure is out of question. For this reason, it contains information on both partition.

- FIX Drop Copy: This is the FIX connection where orders, quotations, trades and special trade notifications flow pertaining to a certain member are provided. It can be used for the purpose of sending related messages of all users of a member, as well as for the purpose of sending the order and trade flow pertaining to sponsored users to sponsoring users. At least two FIX connections are required for two partitions, as in order entry.

OUCH:

This is a new Order Entry protocol introduced by BISTECH system, allowing for a faster order entry compared to other order entry means and therefore suitable for carrying out High Frequency trades. At least two OUCH connections should be installed, so that each member can provide order entry to all instruments distributed over two partitions.

ITCH:

It is a protocol providing a faster data flow compared to other data dissemination protocols. Allows for access to market data with very low latency figures. Despite the fact that area of common use is for high frequency trades, it is especially used by a wide range of market participants for the purpose of faster access to all order and trade information related to the order book.

At least two ITCH connections are required in the BISTECH system to provide access to market information of all instruments distributed over two partitions.

3.2   Contract Codes

The codes of the contracts to trade on the Market will be announced by the Exchange.

For futures contracts, the contract code includes information on the instrument group, underlying asset code, mini contract code and contract month.

Contract codes of single stock futures, which have non-standard specifications because of corporate action adjustment/s will alter to reflect this difference (e.g. codes of contracts which were subject to corporate action adjustment once will end with N1, codes of contracts which were subject to corporate action adjustments twice will end with N2). Unlike the current implementation, no sign (e.g. S0, S1) will be added to codes of the contracts with standard specifications.

For example: F_XXXXXMAAYY contract code consists of the following fields.

F	: Instrument Group (Future contract)
XXXXX	: Underlying asset code
M	: Mini contract code (M: Mini contract)
MMYY	: Maturity Month (0317: March 2017)

For option contracts, the contract includes information on the instrument group, underlying asset code, mini contract code, exercise style, contract month, option class and exercise price.

Contract codes of single stock options, which have non-standart specifications because of corporate action adjustment/s will alter to reflect this difference (e.g. codes of contracts which were subject to corporate action adjustment once will end with N1, codes of contracts which were subject to corporate action adjustments twice will end with N2). Unlike the current implementation, no sign (e.g. S0, S1) will be added to codes of the contracts with standard specifications.

For example: O_XXXXXMZMMYYC5.00 contract code consists of the following fields.

O : Instrument Group (Option contract)
XXXXX : Underlying asset code
M : Mini contract code (M : Mini contract)
Z : Exercise method (A: American-Option can be exercised on any date until or on expiry date, E: European-The contractual right can be used on expiry date)
MMYY : Maturity month (0313: March 2013)
C : Option class (C: Call, P: Put)
5.00 : Strike price (5 TRY)

Contract codes of cascading contracts will be as described below:

F : Instrument Group (Future contract)
XXXXX : Underlying asset code

QX
or : Q; Quarterly contract, X; the maturity quarter of the year.
Y : Yearly contract (Q3: Third quarter)

YY : Maturity year

Example : F_ELCBASQ117, F_ELCBASY17

Amendments in the underlying codes that will be effective after the BISTECH migration are described below:

Former Underlying Code	New Underlying Code
TRYUSD	D_USDTRY
TRYEUR	D_EURTRY
TRYUSDK	D_USDTRYK
XU030XM	D_XU030DM
ONRPM	D_ONREPOM
ONRPQ	D_ONREPOQ

3.3 Price Depth Information

The current 19 level cumulative market depth (price basis) inquiry will be increased to 25 levels in TWs with the adoption of the new System. It is planned as 10 levels in data broadcasting.

3.4 Market Making

Provisions regarding market making will be the same with current system after go-live. Migration will be done with current market makers under revenue sharing based market making program with current requirements and rights.

3.5 Market Maker Performance Assessment

Market maker performance evaluation will be done according to same criteria with current system after go-live. In the evaluation of market makers, only the limit order method will be taken into consideration, quotation orders will not be used.

3.6 Daily Bulletin

New fields will be added to Daily Bulletin which is published in Exchange web site and the format of the bulletin is changed from "excel" to "csv". All fields announced in Daily Bulletin can be found in BISTECH Borsa İstanbul VIOP Data Format from the following link;
http://www.borsaistanbul.com/en/bistechsupport/technical-documents

3.7 VIOP Reports

Format of the reports published will be changed with the new system. All fields announced in these reports can be found in BISTECH Borsa İstanbul VIOP Data Format from the following link;
http://www.borsaistanbul.com/en/bistechsupport/technical-documents

3.8 Mandatory Certification for the Use of BISTECH TWs

The members may send orders and carry out trades at the new trading platform by connecting with the FIX interface or use the personally designated trading workstations.

BISTECH trading workstations to be provided to our members trading in the Derivatives Market can be used by the users who have succesfully completed BISTECH TW training program.

3.9 Temporary Settlement Prices

Temporary settlement prices which are calculated and used in temporary profit/loss calculation in every 10 minutes in current system will be announced in every 1 hour after risk batches in new system. Temporary settlement prices announced in every 1 hour will be used temporary profit/loss calculations. For futures contracts temporary settlement prices will be last trade price executed in relevant time period and for option contracts temporary settlement price will be theoretical price calculated according to the last underlying price in relevant time period.

3.10 Price Margins and Price Limits

Daily price change limits for future contracts is defined in the contract specifications by the Exchange. In calculation of price limits, rounding process made outwards to widen the limits in the existing application will be made inwards to narrow in the new system. The rounding to the

nearest upper tick in finding upper price limit in the existing application shall be made to the nearest lower tick in the new system as the rounding to the nearest lower tick in finding lower price limit shall be made to the nearest upper tick.

While there is no change in the rates of daily price change limits valid for futures contracts, the daily price change limits which will be defined in the system for option contracts are included in Annex-9.

3.11   Different Strike Prices per Option Expirations

In our existing system option strike prices, which are determined by underlying price movements, and ATM levels must be identical for each contract month. Consequently, ATM level and auto generated strike prices for long maturity options might deviate from theoretical values. If an option series does not have any open interest or long order, it could be inactivated automatically as well considering underlying price changes.

Following changes related to option strikes practice will be in effect with Phase2 go-live:

- New option strikes and ATM level may differ per expiration since they will be calculated according to the theoretical price (rather than spot price) of underlying
- ATM levels for each expiration will be published daily to our Members via trading workplace and FIXRD (reference data) channels.
- Inactivation of option series due to underlying price changes will be ceased and auto generated options will be tradable until expiration date unless inactivated by mandatory reasons.

In addition, in the current system, option contracts are created in the system within percentages based on underlying prices. In the BISTECH system, at the money strike price will be determined for each contract month by using the theoretical price calculation method based on the underlying price and the contracts will be created in the following numbers.

Instrument Class	In The Money Contracts	At The Money Contracts	Out of The Money Contracts
Equity Options	1	1	3
BIST30 Index Options	2	1	4
Mini BIST30 Index Options	2	1	4
USDTRY Options	1	1	2

3.12   Position Closing Option of Accounts in Order Entry

In the current system, position closing at order entry is only active for global accounts. With BISTECH transition, the TW order entry screens, FIX OE and OUCH users can enter the position field regardless of whether the corresponding account is global or not. While applications related to global accounts are issued by Takasbank, the related field "default" has been defined as "open" to open a new position for these accounts without netting. The same "default" option is set to "close /net" for other accounts. Accounts other than global accounts are

required to send their position field as "default". Global accounts may send position opening orders as "default" or "open", but they must select "Close/Net" when they send positional closing orders.

3.13 Corporate Action Functionality

In the current system, standard futures and options contracts with open positions are converted into non-standard futures and option contracts after corporate action. With BISTECH system, all standard futures and options contracts in the system will be converted into non-standard futures and options contracts in case of corporate action regardless of open position.

4 ABOLISHED FUNCTIONALITIES

4.1 Correction of Erroneous Transactions (Rectify Trades)

In our current production system, correction of erroneous trades as a result of the mistyped account numbers for the orders are conducted on trading workplaces by firm managers. After BISTECH migration, these corrections can be done as rectify trades via clearing workplaces. Rules, fee schedule and application principles regarding rectify trade operation will be announced by Takasbank. Rectify trade amendments can be performed on trade level.

4.2 Batched Order File

Batched orders files will not be used in new BISTECH system. But users can prepare inactive orders and sent to the system by using inactive order functionality.

4.3 Neg Deal

In current system there is Negotiated Deal Boards where high quantity orders may be traded other than Main Board. Negotiated deals where both sides are identified shall be traded on the Negotiated Deals Board, subject to the approval of the Exchange. With the new system there will be just Main Board. Instead of Negotiated Deal Board there will be Trade reporting functionality. Trade Reporting is used when a match has been matched outside the Marketplace and the trade is reported manually into the system.

4.4 Real-Time Dissemination of Number of Open Interest

Number of open interest calculated real-time in the current system will be updated once in a day in the BISTECH System. Number of open interest in contract basis may be monitored in TWs. "Updated number of open interest" and "change in number of open interest" will be disseminated via data dissemination system at the end of day.

4.5 Risky Accounts

With BISTECH integration, current rules used for determining risk levels and risk status of accounts will not be in use. In BISTECH system margin sufficiency of accounts will be checked by comparing margin consumption calculated by pre-trade margin model with the available collateral calculated by the component of clearing system responsible for real time margin calculations. In the case where the available collateral is negative for an account, breach will occur and the affected account will be in "risky" status. Risky accounts are not allowed to enter

position increasing orders and can only enter position decreasing orders. All long orders of an account in breach state will be cancelled. Contrary to the existing rule, risky accounts can have more than one order that can wait open in the trading system.

ANNEXES:

ANNEX-1: AFTER-HOURS TRADING
ANNEX -2: CONTRACT HIERARCY
ANNEX -3: TRADE REPORTING
ANNEX -4: PRE-TRADE RISK MANAGEMENT
ANNEX -5: SESSION STATES AND APPLICABLE ORDER TYPES
ANNEX -6: ORDER TYPES AND EXAMPLES
ANNEX -7: MATCHING EXAMPLES OF STANDARD STRATEGY CONTRACTS
ANNEX -8: TRADING HOURS
ANNEX -9: PRICE MARGINS AND PRICE LIMITS

ANNEX – 1

AFTER-HOURS TRADING

5 ANNEX-1: STRUCTURE OF MORNING AND EVENING (OFF-HOUR) SESSIONS

Custom trading rules for morning and evening sessions which planned to be implemented in near future after initial go-live are summarized below.

- Off-hours flag is mandatory to enter orders in morning and evening sessions. Otherwise orders will be rejected by matching engine (ME). Moreover, if GTC and GTD long orders in normal session are opted to be valid in morning and/or evening sessions, off-hours flag must be specified as well.
- Passive (unmatched) GTD and GTC orders without off-hour flag will be inactivated in morning and evening sessions. Once normal session period is started, they will be activated automatically with preserved time priority.
- Allowed order types in morning and evening sessions will be restricted with Limit, Market, Market to Limit and Stop orders. In addition, GTD and GTC order validities will not be used during morning and evening continuous matching sessions.
- In principle, if an order is intended to be valid in sequential evening and morning sessions, it must be entered in normal session as a GTD or GTC order with off-hours flag. Passive orders that entered in evening session would be deleted automatically by the system. Trader should re-enter order in morning session (if he needs) in this case. Orders entered during morning session will be deleted before normal session whilst normal session orders without off-hour flag will be removed by the end of normal session.
- Trade reporting will not be allowed during morning and evening sessions.
- Increasing time (validity) of orders during morning and evening sessions will not be allowed.
- Creation of user-defined flexible contracts will not be allowed to comply with risk management
- Trades occurred in morning and evening sessions may exempt from daily and/or final settlement price calculations.
- Market maker obligations (min spread, market presence) effective in normal session may be relaxed or removed at all during morning and evening sessions.
- Normal session price statistics as Last, %Change, High, Low, Volume, Trade Value and Deals will be reset with evening session. However, statistics of evening session will be carried to next day morning session as so. Thus, statistics of previous day's evening session and today's morning session will be consolidated. Reset job similar to normal-evening session transition will be applied transiting from morning to normal session as well to parse off-hour trades.
- PTRM parameters effective in normal session may be differentiated during morning and evening sessions.

ANNEX – 2 (HK-OO)

INSTRUMENT HIERARCHY

6   ANNEX 2: INSTRUMENT HIERARCHY

MARKET	MARKET SEGMENT	INSTRUMENT GROUP	INSTRUMENT TYPE	INSTRUMENT CLASS	UNDERLYING
176/VIOP CURRENCY DERIVATIVES MARKET	CRO/CURRENCY OPTIONS-TRY	ECO-EUROPEAN CALL OPTIONS	D_CR_ECO-CURRENCY CALL OPTIONS (EUROPEAN)	DE_USDTRYK_ECO	D_USDTRYK
		EPO-EUROPEAN PUT OPTIONS	D_CR_EPO- CURRENCY PUT OPTIONS (EUROPEAN)	DE_USDTRYK_EPO	
	CRF/CURRENCY FUTURES-TRY	FTW-WEEKLY FUTURES	D_CR_FTW-CURRENCY WEEKLY FUTURES	DE_USDTRY_FTW	D_USDTRY
	CRF/CURRENCY FUTURES-TRY	FUT-FUTURES	D_CR_FUT-CURRENCY FUTURES	DE_USDTRY_FUT	D_USDTRY
	CRF/CURRENCY FUTURES-TRY			DE_EURTRY_FUT	D_EURTRY
	CRFU/CURRENCY FUTURES-USD			DE_EURUSD_FUT	D_EURUSD
182/VIOP COMMODITY DERIVATIVES MARKET	CMF/COMMODITY FUTURES-TRY	FPD-PHYSICAL DELIVERY FUTURES	D_CT_FPD-COMMODITY FUTURES (PHY DEL)	DE_COTEGE_FPD	D_COTEGE
				DE_WHTANR_FPD	D_WHTANR
				DE_WHTDRM_FPD	D_WHTDRM
	CMF/COMMODITY FUTURES-TRY	FUT-FUTURES	D_CT_FUT-COMMODITY FUTURES	-	-
185/VIOP POWER DERIVATIVES MARKET	ENF/POWER FUTURES-TRY	FUT-FUTURES	D_EL_FUT-SIMPLE ELECTICITY FUTURES	DE_ELCBAS01B_FUT	D_ELCBAS01
				DE_ELCBAS02B_FUT	D_ELCBAS02
				DE_ELCBAS03B_FUT	D_ELCBAS03
				DE_ELCBAS04B_FUT	D_ELCBAS04
				DE_ELCBAS05B_FUT	D_ELCBAS05
				DE_ELCBAS06B_FUT	D_ELCBAS06
				DE_ELCBAS07B_FUT	D_ELCBAS07
				DE_ELCBAS08B_FUT	D_ELCBAS08
				DE_ELCBAS09B_FUT	D_ELCBAS09

				DE_ELCBAS10B_FUT	D_ELCBAS10
				DE_ELCBAS11B_FUT	D_ELCBAS11
				DE_ELCBAS12B_FUT	D_ELCBAS12
				DE_ELCBASQ1B_FUT	D_ELCBASQ1
				DE_ELCBASQ2B_FUT	D_ELCBASQ2
				DE_ELCBASQ3B_FUT	D_ELCBASQ3
				DE_ELCBASQ4B_FUT	D_ELCBASQ4
				DE_ELCBASYB_FUT	D_ELCBASY
168/VIOP EQUITY DERIVATIVES MARKET	SSO/EQUITY OPTIONS-TRY	ECP-PHYSICAL DELIVERY CALL OPTIONS	D_EQ_ECP-EQUITY CALL OPTIONS (PHY DEL)	DE_AKBNK_ECP	AKBNK.E
				DE_ARCLK_ECP	ARCLK.E
				DE_EKGYO_ECP	EKGYO.E
				DE_EREGL_ECP	EREGL.E
				DE_GARAN_ECP	GARAN.E
				DE_HALKB_ECP	HALKB.E
				DE_ISCTR_ECP	ISCTR.E
				DE_KCHOL_ECP	KCHOL.E
				DE_KRDMD_ECP	KRDMD.E
				DE_PETKM_ECP	PETKM.E
				DE_PGSUS_ECP	PGSUS.E
				DE_SAHOL_ECP	SAHOL.E
				DE_SISE_ECP	SISE.E
				DE_TCELL_ECP	TCELL.E
				DE_THYAO_ECP	THYAO.E
				DE_TOASO_ECP	TOASO.E
				DE_TTKOM_ECP	TTKOM.E
				DE_TUPRS_ECP	TUPRS.E
				DE_VAKBN_ECP	VAKBN.E

				DE_YKBNK_ECP	YKBNK.E
		EPP-PHYSICAL DELIVERY PUT OPTIONS	D_EQ_EPP-EQUITY PUT OPTIONS (PHY DEL)	DE_AKBNK_EPP	AKBNK.E
				DE_ARCLK_EPP	ARCLK.E
				DE_EKGYO_EPP	EKGYO.E
				DE_EREGL_EPP	EREGL.E
				DE_GARAN_EPP	GARAN.E
				DE_HALKB_EPP	HALKB.E
				DE_ISCTR_EPP	ISCTR.E
				DE_KCHOL_EPP	KCHOL.E
				DE_KRDMD_EPP	KRDMD.E
				DE_PETKM_EPP	PETKM.E
				DE_PGSUS_EPP	PGSUS.E
				DE_SAHOL_EPP	SAHOL.E
				DE_SISE_EPP	SISE.E
				DE_TCELL_EPP	TCELL.E
				DE_THYAO_EPP	THYAO.E
				DE_TOASO_EPP	TOASO.E
				DE_TTKOM_EPP	TTKOM.E
				DE_TUPRS_EPP	TUPRS.E
				DE_VAKBN_EPP	VAKBN.E
				DE_YKBNK_EPP	YKBNK.E
168/VIOP EQUITY DERIVATIVES MARKET	SSF/EQUITY FUTURES-TRY	FPD-PHYSICAL DELIVERY FUTURES	D_EQ_FPD-EQUITY FUTURES (PHY DEL)	DE_AKBNK_FPD	AKBNK.E
				DE_ARCLK_FPD	ARCLK.E
				DE_EKGYO_FPD	EKGYO.E
				DE_EREGL_FPD	EREGL.E
				DE_GARAN_FPD	GARAN.E
				DE_HALKB_FPD	HALKB.E

				DE_ISCTR_FPD	ISCTR.E
				DE_KCHOL_FPD	KCHOL.E
				DE_KRDMD_FPD	KRDMD.E
				DE_PETKM_FPD	PETKM.E
				DE_PGSUS_FPD	PGSUS.E
				DE_SAHOL_FPD	SAHOL.E
				DE_SISE_FPD	SISE.E
				DE_TCELL_FPD	TCELL.E
				DE_THYAO_FPD	THYAO.E
				DE_TOASO_FPD	TOASO.E
				DE_TTKOM_FPD	TTKOM.E
				DE_TUPRS_FPD	TUPRS.E
				DE_VAKBN_FPD	VAKBN.E
				DE_YKBNK_FPD	YKBNK.E
178/VIOP ETF DERIVATIVES MARKET	ETF/ETF FUTURES-TRY	FUT-FUTUES	D_ET_FUT-ETF FUTURES	DE_FBIST_FUT	FBIST.F
181/VIOP OVERNIGHT REPO RATE (INTEREST RATE) DERIVATIVES MARKET	ONF/FIXED INCOME FUTURES-TRY	FUT-FUTURES	D_FI_FUT-FIXED INCOME FUTURES	DE_ONREPOM28_FUT	D_ONREPOM
				DE_ONREPOM29_FUT	
				DE_ONREPOM30_FUT	
				DE_ONREPOM31_FUT	
				DE_ONREPOQ90_FUT	D_ONREPOQ
				DE_ONREPOQ91_FUT	
				DE_ONREPOQ92_FUT	
171/VIOP FOREIGN INDICES DERIVATIVES MARKET	FIF/FOREIGN INDEX FUTURES-TRY	FUT-FUTURES	D_FR_FUT-FOREIGN INDEX FUTURES	DE_SASX10_FUT	D_SASX10
170/VIOP INDEX DERIVATIVES MARKET	INO/INDEX OPTIONS-TRY	ECM-MINI INDEX EUROPEAN CALL OPTIONS	D_IX_ECM-MINI INDEX EUROPEAN CALL OPTIONS	DE_BIST30M_ECM	D_XU030DM

		ECO- INDEX EUROPEAN CALL OPTIONS	D_IX_ECO-INDEX EUROPEAN CALL OPTIONS	DE_BIST30_ECO	D_XU030D
		EPM- MINI INDEX EUROPEAN PUT OPTIONS	D_IX_EPM-MINI INDEX EUROPEAN PUT OPTIONS	DE_BIST30M_EPM	D_XU030DM
		EPO- INDEX EUROPEAN PUTT OPTIONS	D_IX_EPO-INDEX EUROPEAN PUT OPTIONS	DE_BIST30_EPO	D_XU030D
	INF/INDEX FUTURES-TRY	FUT-FUTURES	D_IX_FUT-INDEX FUTURES	DE_BIST30_FUT	D_XU030D
180/VIOP METAL DERIVATIVES MARKET	MTF/METAL FUTURES-TRY	FUT-FUTURES	D_MT_FUT-METAL FUTURES	DE_HMSTR_FUT	D_HMSTR
179/VIOP PRECIOUS METALS DERIVATIVES MARKET	PMFU/PRECIOUS METALS FUTURES-USD	FPD-PHYSICAL DELIVERY FUTURES	D_PM_FPD-PRECIOUS METALS FUTURES (PHY DEL)	DE_XAUUSDP_FPD	D_XAUUSDP
	PMFU/PRECIOUS METALS FUTURES-USD	FTW-WEEKLY FUTURES	D_PM_FTW-PRECIOUS METALS WEEKLY FUTURES	DE_XAUUSD_FTW	D_XAUUSD
	PMF/PRECIOUS METALS FUTURES-TRY	FUT-FUTURES	D_PM_FUT-PRECIOUS METALS FUTURES	DE_XAUTRY_FUT	D_XAUTRY
	PMFU/PRECIOUS METALS FUTURES-USD			DE_XAUUSD_FUT	D_XAUUSD

ANNEX – 3

TRADE REPORTING

7 ANNEX 3: TRADE REPORTING

Exchange members may send their buy and sell orders matching in quantity and price from the same or different customers for the contracts traded in the Derivatives Market and defined by the Exchange, within the price and quantity limits, they are allowed to report such orders to be executed to a trade before transmitting them to the order book. Trade reports are high quantity trades and statistics regarding the trade reports, which have been held subject to necessary controls in the Exchange and turned into trade, will be announced under the title of trade report separately from the trades realized in the order book. Trades reports will not be taken into consideration in the settlement price calculations. BISTECH shall support two types of trade reporting methods:

- Single sided trade reporting: It'll be used in case of having different members as the parties of trade. One of the members transmits the information such as buy or sell, quantity, price, customer information and info of the counterparty member. The counterparty will match the trade report by entering the trade information on his side.
- Double sided trade reporting: In case, the same member is both buyer and seller, the quantity, price, customer information belonging to buy and sales sides will be entered and reported.

Trade reports may be executed by firm managers and FIX order entry users. Trade reports are applicable to all derivatives contracts.

Statistics relating to trade reporting will be published separately from other trade statistics on the market. But they will be included in both total and series' total traded volume and value.

Trade reports shall not be matched partially. Trade reports may be subject to the approval of the Exchange. If the Exchange does not approve, such transactions may not be executed and relevant trade reports shall be cancelled.

Trade reports are executed during normal session of relevant contracts.

Price limits for trade reports are the same with normal orders. The minimum and maximum order sizes applicable for trade reports are as follows:

Order Sizes for Single Stock Futures and Options' Trade Reports

Underlying Asset Price	Minimum Order Quantity	Maximum Order Quantity
Underlying Asset Closing Price <25 TRY	5.000	10.000
Underlying Asset Closing Price >=25 TRY	2.500	5.000

Order Sizes for Index, Currency, Gold, Base Load Electricity and Other Contracts' Trade Reports

Contracts	Minimum Order Quantity	Maximum Order Quantity
Index Contracts	2.000	4.000
Mini Index Contracts	200.000	400.000
Currency and USD/Ounce Gold Contracts	5.000	10.000
Gold Contracts	500.000	1.000.000
Base Load Electricity Contracts	100	4.000
Other Contracts	2.000	4.000

APPENDIX – 4

PRE-TRADE RISK MANAGEMENT

8   APPENDIX 4: PRE-TRADE RISK MANAGEMENT

8.1   GENERAL STRUCTURE OF PRE-TRADE RISK MANAGEMENT

BISTECH PTRM is integrated with the Trading and Clearing platforms to provide pre-trade and at-trade risk management. PTRM, offers the Exchange and its members the ability to control the risk arising from both orders and trades.

Figure 1: Pre-Trade Risk Management – General Structure

PTRM provides below pre-trade (pre-order & post order) and at-trade risk checks:

- User and account based validations
- Risk group checks
- Margin checks
- Position limit checks

Orders entered into the trading system are subject to risk checks above. In the case where the order fail these checks, order will be rejected.

8.2   USER AND ACCOUNT BASED VALIDATIONS

At the time of order entry and amendment, PTRM validate the user and account information:

- User & Instrument Validation: Users are only allowed to trade instruments that they are authorized.
- Account Validation: Orders cannot be sent if account number is not filled in or if the account number is invalid.

- Account & Instrument Validation: Accounts are only allowed to trade instruments that they are authorized.
- User & Account Validation: Users are only allowed to trade using the accounts that they are authorized.

8.3 RISK GROUP CHECKS

Risk exposure of users entering order into the system is controlled by risk group checks. Risk group checks are comprised of a group of users connected to a participant. For each risk group, risk limits and risk calculation methods are configurable and PTRM provides below risk group checks:

- Maximum order size
- Restricted instruments
- Order rate limitations
- Intraday position limits

Figure 2: Risk Group Checks

Risk calculation methods used in risk calculations for position risk limit checks and maximum order size check are as below:

- Quantity (number of contracts traded)
- Volume (number of contracts traded * contract size)
- Value (number of contracts traded * contract size * price * exchange rate)

Participants may have several risk groups but a user can only be connected to one risk group. Each risk group may represent different risk limits. For each risk group; maximum

order size, position risk limits and calculation methods can be configurable per instrument class and instrument type. Order rate limit is configurable per risk group. In cases of limit breaches, risk groups are blocked.

PTRM can also be configured to send three types of email alerts:

- Notice: Lowest level of alert.
- Warnings: Highest level of alert.
- Breaches: Risk limit values have been exceeded.

Each limit defined for a risk group will only send one notice, warn, and breach email alert per trading day.

8.3.1 Maximum Order Size

Maximum order size validation is performed at order entry and amendment as stated below:

- Order Size $\geq$ Maximum order size ---> Order rejected
- Order Size $<$ Maximum order size ---> Order accepted

Maximum order size is the maximum quantity, value or volume of an order that shall be allowed for a risk group. Maximum Order Size and calculation method of order size shall be configurable per instrument class and instrument type.

8.3.2 Position Risk Limits

The exposure of all risk group users on a set of instruments is calculated together. This combined exposure can be limited according to several calculations which are listed below:

A:	Open Orders-Buy	
B:	Open Orders-Sell	
C:	Traded Bought	
D:	Traded Sell	
E:	Traded Net	$\mathbf{E = |C\text{-}D|}$
F:	Total Buy	$\mathbf{F = A\text{+}C}$
G:	Total Sell	$\mathbf{G = B\text{+}D}$
H:	Total Net Buy	$\mathbf{H = C\text{-}D\text{+}A}$
I:	Total Net Sell	$\mathbf{I = D\text{-}C\text{+}B}$

For each risk group, position risk limits and calculation method shall be configurable per instrument class and instrument type. If either the nine position risk counters equals or exceeds the given limit for a specific instrument class or instrument type, breaches occur on this instrument class or instrument type for the risk group.

When a breach occurs for a risk group instrument class or instrument type, users of this risk group are:

- not allowed to submit new orders or amend existing orders in any of the series connected to the affected instrument class or instrument type
- allowed to cancel orders
- allowed to enter new orders for unbreached instrument class or instrument type

If a user cancels long orders until their limit is no longer in breach, the breach restriction is lifted and users of the risk group can trade normally. A breached limit is unbreached automatically when the consumption falls below the configured limit or when the configured limit is increased.

8.3.3 Order Rate Limits

Order rate limit measures the rate of the orders entered into the trading engine from all users of a risk group. Order rate limit check is based on new orders inserted into the book. Below orders are ignored by the order rate limit check:

- Order cancel requests
- Rejected orders
- Order modifications
- Order types that do not stay in the book

Order rate limit is defined as new orders per second. The order rate limit is checked every 1/10th of a second. Order rate limit breaches if the order rate is higher than one tenth of the set limit within one tenth of a second.

When a risk group equals or exceeds the defined order rate limit, group is blocked. When a risk group is blocked,

- New orders and amendments are rejected for the instrument class or instrument type breached.
- Order cancellations are allowed.
- Users can connect to the system, take broadcast and inquire.

A manual unblock is required to lift the breach restriction. If the blocked risk group is not unblocked manually during trading day, the blocked group will be unblocked automatically at the beginning of the next trading day.

8.3.4 Restricted Instruments

Participants may restrict the instruments of a risk group. If restricted instruments is enabled, a risk group may only trade in the instrument types/classes for which the participant has explicit limits set.

8.3.5 Monitored User and Default Group

Monitored User

A risk group can be configured to monitor the connection status of a specified user real-time. If the monitored user disconnects, users in the risk group are automatically blocked from entering transactions and all open orders are cancelled. Setting a monitored user is optional.

Default Group
Designating a group as the default group associates transactions from the default user into the group. Unless a risk group is designated as the default group, these transactions will not be represented in the overall risk calculated. Transactions by the default user are those where the user field does not contain a valid user ID. Since derivatives market has user and account based validations at the time of order entry and amendment, this functionality will not be necessary for derivatives market participants.

8.3.6 Block & Unblock and Breach & Unbreach of a Risk Group

There are three ways a risk group can be blocked:
- Manually blocked by participant or by exchange.
- Automatically blocked if the monitored user loses its connection.
- Automatically blocked when order rate limit breached.

There is one way a risk group can be breached:
- Automatically when risk group exceeds one of its position risk limits.

Automatically breached positions risk limits are unbreached automatically when the consumption falls below the configured limit or when the configured limit is increased by Exchange or participant. A manual unblock is required to lift the block restriction arising from exceeding the order rate limit. If the blocked risk group is not unblocked manually during trading day, the blocked group will be unblocked automatically at the beginning of the next trading day. If the monitored user has lost its connection, the group must be manually unblocked even if the monitored user is logged back in. Manual intervention is required to finish the blocking in case of disconnection of the monitored user, it is not enough to reconnect the monitored user.

A risk group can be blocked manually by the participant or by the Exchange. In addition to this functionality, it is also possible to cancel all open orders of a risk group at once.

8.3.7 Risk Group Parameter Changes

Risk parameters required for risk group checks can be changed intraday, but only certain actions are allowed intraday. Other actions will take effect on the next business day. The following changes can be made and are effective at any time:

- Updating limit values (position limits, order rate limits, maximum order size)
- Setting/Changing notice and warn percentages
- Adding new e-mail alert recipient
- Blocking and unblocking a risk group
- Manually unblocking order rate breach

- Setting email alerts
- Setting order rate limit
- Turning on/off restricted instrument flag
- Mass cancelation of open orders of a risk group

The following changes become effective on the next day:

- Creating and deleting a risk group
- Adding and deleting position risk limits for a risk group
- Adding and removing users to/from a risk group
- Removing existing e-mail alert recipients
- Changing monitored user of a risk group
- Setting the default group
- Changing which thresholds trigger email alerts

8.3.8 Exchange and Member Limits

Limits and calculation methods used for risk group checks may be set by participants and the Exchange as well. Exchange may also set an exchange wide limit per instrument class and instrument type. Limits are inheritable, meaning when no explicit limit is directly set at one level, it can be inherited from the level above it. An exchange wide limit inherited by all risk groups which do not have explicitly set exchange or participant limits. For each risk group two sets of limits are stored. The first is set by the Exchange. The second is set by the participant and must be smaller than the exchange limit. The Exchange may set a larger limit for a particular risk group, and in this case the exchange-wide limit will be overridden.

Each position risk limit can be configured to use either a quantity, volume or value calculation method. Since setting risk limits at different levels is possible: exchange-wide limits, exchange risk group limits, participant risk group limits and calculation method set for each level allow for like comparison of limit values. For instance, if the exchange sets a limit on a risk group using the value calculation method, then the participant must also use the value calculation method. This will ensure that the participant limit does not exceed the exchange limit.

It is not planned to set exchange-wide limits and exchange risk group limits in the first stage of BISTECH system.

8.3.9 Exceptions for Risk Group Checks

In this section, special transactions are described since clarification is required due to their special nature.

8.3.9.1 Trade Reports

Trade reports are included in position risk calculations as other trades. Traded bought and traded sold counters are updated with the entry of one-sided or two-sided trade reports. PTRM cannot reject trade reports during the maximum order size check or after a risk group is blocked.

8.3.9.2 Linked Orders

Linked orders which can be entered into the trading system up to ten legs with same quantity at once are validated per leg. If any leg of the linked order violate the maximum order size check, then the linked order is rejected. Risk is consumed for all linked order legs during the calculation of consumption for position risk counters.

8.3.9.3 Stop Orders

Stop orders may have conditions to be triggered by price or by session. Until the condition is realized, these orders are untriggered. Untriggered orders do not consume risk at the time of order entry. Risk consumption is calculated at the time of trigger for these orders.

8.3.9.4 Good Till Cancel and Date Orders

Long-dated (GTC &GTD) orders are loaded into the system at the beginning of each day. At this stage, cancellation or rejection of the orders is not possible. Maximum order size checks will not be done at the beginning of each trading day for long-dated orders.

8.3.9.5 Inactive Orders

Orders inactivated by users (local inactivation) do not consume risk after inactivation. Order inactivated by the system (central inactivation) consume risk after inactivation and therefore do not consume any additional risk at the time of activation.

8.3.9.6 Combination Instruments

Limits; may be set on roll-over combinations that are designed for roll-over operations during expiry periods and tailor-made combinations created by users within specified limits or may be set separately on instrument types and instrument classes that make up legs of a combination instrument. Combinations are restricted to only use the quantity calculation method, but all calculation methods can be set on instrument types and instrument classes that make up legs of a combination instrument.

8.3.10 Examples of Risk Group Checks

In this section, examples regarding risk group checks are given. These examples include different risk groups comprising of a group of users with different user types.

Users are only allowed to trade instruments that they are authorized. This authorization is configured at the level of user type and may be restricted using the configuration at the level of risk group that the user belongs. Participants may restrict the instruments of a risk group.

If restricted instruments is enabled, a risk group may only trade in the instrument types/classes for which the participant has explicit limits set.

Table 1: User Types and Valid Instruments

User Type	Valid Instrument Types
User Type 1	USD/TRY Futures EUR/USD Futures
User Type 2	Currency Futures
User Type 3	USD/TRY Futures EUR/TRY Futures

Table 2: Users and User Type

Participant	User	User Type
Participant 1	User 11	User Type 1
	User 12	User Type 1
	User 13	User Type 1
Participant 2	User 21	User Type 2
	User 22	User Type 2
Participant 3	User 31	User Type 3
	User 32	User Type 3
	User 33	User Type 3
	User 34	User Type 3

Risk groups are comprised of a group of users connected to a participant. Risk groups used in examples are listed below with the users they include:

Table 3: Risk Groups

Risk Group	User
Risk Group 1	User 11 User 12 User 13
Risk Group 2	User 21 User 22
Risk Group 3	User 31 User 32
Risk Group 4	User 33

Risk Group 5	User 34

As it is already stated, exchange wide limits may be set at instrument type and instrument class level. Exchange may use either a quantity, volume or value calculation method as a risk calculation method. Exchange wide limits used in examples are stated below:

Table 4: Exchange wide limits

Contract	Exchange-wide Limits
USD/TRY Futures	1.000.000
EUR/TRY Futures	1.000.000
EUR/USD Futures	1.000.000
Currency Futures	5.000.000

For each risk group; exchange set limits, participant set limits and restricted instrument configuration are given in the remaining part of this section. For some risk groups exchange wide limits in table 4 are differentiated by the exchange and in this case the exchange-wide limit is overridden. Nine different position risk limits may be configured per instrument type and instrument class and it may be assumed that the limits set in examples below are valid for nine type of the limitations.

Example 1: Risk Group 1

Risk Group 1 is comprised of User 11, User 12 and User 13 connected to Participant 1. Since restricted instruments is enabled, Risk Group 1 may only trade in the instrument types/classes for which the participant has explicit limits set.

Regardless of restricted instrument configuration, users of Risk Group 1 are not allowed to trade EUR/TRY futures since their user types are not authorized for these contracts.

Exchange set limits, participants set limits and valid limits are as below for Risk Group 1:

User	Instrument	Restricted Instruments	Participant Limit	Exchange Limit	Valid Limit
User 11 User 12 User 13	USD/TRY Futures	√	50.000	100.000	50.000
	EUR/TRY Futures		50.000	100.000	0
	EUR/USD Futures		0	**1.000.000**	500.000
	Currency Futures		**500.000**	500.000	500.000

Exchange-wide limit set for currency futures at instrument type level is differentiated by exchange and defined as 500.000 for Risk Group 1. Since participant has no explicit limit at this level, 500.000 is inherited from above level.

Exchange-wide limit set for USD/TRY futures contracts at instrument class level is differentiated by exchange and defined as 100.000 for Risk Group 1. Participant set explicit limits for USD/TRY futures as 50.000 and this limit is the valid limit since more restricted.

Exchange-wide limit set for EUR/USD futures contracts at instrument class level is not differentiated by exchange and participant has no explicit limit at this level. Valid limit, 500.000, is inherited from instrument type level.

Example 2: Risk Group 2

Risk Group 2 is comprised of User 21 and User 22 connected to Participant 2. Restricted instruments are disabled and instruments of Risk Group 2 are not restricted by participant. Users of Risk Group 2 are allowed to trade all currency futures since their user types are authorized for these contracts.

Exchange set limits, participants set limits and valid limits are as below for Risk Group 2:

User	Instrument	Restricted Instruments	Participant Limit	Exchange Limit	Valid Limit
User 21 User 22	USD/TRY Futures	X	50.000	100.000	50.000
	EUR/TRY Futures		50.000	100.000	50.000
	EUR/USD Futures		600.000	**1.000.000**	500.000
	Currency Futures		**500.000**	500.000	500.000

Exchange-wide limit set for currency futures at instrument type level is differentiated by exchange and defined as 500.000 for Risk Group 2. Since participant has no explicit limit at this level, 500.000 is inherited from above level.

Exchange-wide limits set for USD/TRY and EUR/TRY futures contracts at instrument class level are differentiated by exchange and defined as 100.000 for Risk Group 2. Participant set explicit limits for USD/TRY and EUR/TRY futures as 50.000 and these limits are the valid limits since more restricted.

Exchange-wide limit set for EUR/USD futures contracts at instrument class level is not differentiated by exchange, but participant set explicit limit at this level as 600.000. Valid limit, 500.000, is inherited from instrument type level.

Example 3: Risk Group 3

Risk Group 3 is comprised of User 31 and User 32 connected to Participant 3. Since restricted instruments is enabled, Risk Group 3 may only trade in the instrument types/classes for which the participant has explicit limits set.

Regardless of restricted instrument configuration, users of Risk Group 3 are not allowed to trade EUR/USD futures since their user types are not authorized for these contracts.

Exchange set limits, participants set limits and valid limits are as below for Risk Group 3:

User	Instrument	Restricted Instruments	Participant Limit	Exchange Limit	Valid Limit
User 31 User 32	USD/TRY Futures	√	50.000	100.000	50.000
	EUR/TRY Futures		100.000	100.000	0
	EUR/USD Futures		1.000.000	1.000.000	0
	Currency Futures		500.000	500.000	50.000

Exchange-wide limit set for currency futures at instrument type level is differentiated by exchange and defined as 500.000 for Risk Group 3. Since participant has no explicit limit at this level, 500.000 is inherited from above level.

Exchange-wide limits set for USD/TRY and EUR/TRY futures contracts at instrument class level are differentiated by exchange and defined as 100.000 for Risk Group 3. Participant set explicit limit for USD/TRY futures as 50.000 and this limit is the valid limits since more restricted. Participant has no explicit limit for EUR/TRY futures and 100.000 is inherited from above level. Since restricted instruments is enabled for Risk Group 3 and users may only trade in the instrument classes for which the participant has explicit limits set, users are not allowed to trade EUR/TRY futures.

Example 4: Risk Group 4

Risk Group 4 is comprised of User 33 connected to Participant 3. Restricted instruments is disabled and instruments of Risk Group 4 are not restricted by participant.

Regardless of restricted instrument configuration, users of Risk Group 4 are not allowed to trade EUR/USD futures since their user types are not authorized for these contracts.

Exchange set limits, participants set limits and valid limits are as below for Risk Group 4:

User	Instrument	Restricted Instruments	Participant Limit	Exchange Limit	Valid Limit
User 33	USD/TRY Futures	X	50.000	100.000	50.000
	EUR/TRY Futures		100.000	100.000	100.000
	EUR/USD Futures		1.000.000	1.000.000	0
	Currency Futures		500.000	500.000	500.000

Exchange-wide limit set for currency futures at instrument type level is differentiated by exchange and defined as 500.000 for Risk Group 4. Since participant has no explicit limit at this level, 500.000 is inherited from above level. Since more restricted limits are set at instrument class level, actual valid limit will be 150.000 for currency futures.

Exchange-wide limit set for USD/TRY and EUR/TRY futures contracts at instrument class level are differentiated by exchange and defined as 100.000 for each instrument class for Risk Group 4. Participant set explicit limits for USD/TRY futures as 50.000 and this limit is the valid limit since more restricted. Participant has no explicit limit for EUR/TRY futures and 100.000 is inherited from above level.

Example 5: Risk Group 5

Risk Group 5 is comprised of User 34 connected to Participant 3. Since restricted instruments is enabled, Risk Group 5 may only trade in the instrument types/classes for which the participant has explicit limits set.

Regardless of restricted instrument configuration, users of Risk Group 5 are not allowed to trade EUR/USD futures since their user types are not authorized for these contracts.

Exchange set limits, participants set limits and valid limits are as below for Risk Group 5:

User	Instrument	Restricted Instruments	Participant Limit	Exchange Limit	Valid Limit
User 34	USD/TRY Futures	√	100.000	100.000	100.000
	EUR/TRY Futures		100.000	100.000	100.000
	EUR/USD Futures		100.000	100.000	0
	Currency Futures		150.000	500.000	150.000

Exchange-wide limit set for currency futures at instrument type level is differentiated by exchange and defined as 500.000 for Risk Group 5. Participant set explicit limits for currency futures at instrument type level as 150.000 and this limit is the valid limit since more restricted.

Exchange-wide limit set for USD/TRY and EUR/TRY futures contracts at instrument class level are differentiated by exchange and defined as 100.000 for each instrument class for Risk Group 5. Since participant has no explicit limit at this level, 100.000 is inherited from above level for each instrument class. Even though participant has no explicit limit for USD/TRY and EUR/TRY futures, users are not restricted to trade these contracts. Because participant set explicit limits for currency futures at instrument type level.

Once it is assumed that above limit values are set for nine type of the position risk limitations, valid limits for Risk Group 5 are listed below per instrument class and instrument type:

Limits	Instrument Type & Class		
	Currency Futures	USD/TRY Futures	EUR/TRY Futures
Open Orders - Buy	150,000	100,000	100,000
Open Orders - Sell	150,000	100,000	100,000
Traded Bought	150,000	100,000	100,000
Traded Sold	150,000	100,000	100,000
Traded Net	150,000	100,000	100,000

Total Buy	150,000	100,000	100,000
Total Sell	150,000	100,000	100,000
Total Net Buy	150,000	100,000	100,000
Total Net Sell	150,000	100,000	100,000

Risk consumptions are calculated for below successive scenarios with the assumption of risk calculation method is determined as value (quantity*contract size*price*exchange rate) and results are shown for each scenario.

Scenario 1: Buy order entry @2.7500 TRY with quantity of 10 to the nearby USD/TRY futures contract

Risk Consumption	Instrument Type & Class		
	Currency Futures	USD/TRY Futures	EUR/TRY Futures
Open Orders - Buy	27,500	27,500	0
Open Orders - Sell	0	0	0
Traded Bought	0	0	0
Traded Sold	0	0	0
Traded Net	0	0	0
Total Buy	27,500	27,500	0
Total Sell	0	0	0
Total Net Buy	27., 00	27,500	0
Total Net Sell	0	0	0

Scenario 2: Sell order entry @3.1500 with quantity of 10 to the nearby EUR/TRY futures contract

Risk Consumption	Instrument Type & Class		
	Currency Futures	USD/TRY Futures	EUR/TRY Futures
Open Orders - Buy	27,500	27,500	0
Open Orders - Sell	31,500	0	31,500
Traded Bought	0	0	0
Traded Sold	0	0	0
Traded Net	0	0	0
Total Buy	27,500	27,500	0
Total Sell	31,500	0	31,500
Total Net Buy	27,500	27,500	0
Total Net Sell	31,500	0	31,500

Scenario 3: Executing the order in Scenario 1 @2.7500

Risk Consumption	Instrument Type & Class		
	Currency Futures	USD/TRY Futures	EUR/TRY Futures
Open Orders - Buy	0	0	0
Open Orders - Sell	31,500	0	31,500
Traded Bought	27,500	27,500	0
Traded Sold	0	0	0
Traded Net	27,500	27,500	0
Total Buy	27,500	27,500	0
Total Sell	31,500	0	31,500
Total Net Buy	27,500	27,500	0

Total Net Sell	31,500	0	31,500

Scenario 4: Amending the quantity of the order in Scenario 2 as 48

Risk Consumption	Instrument Type & Class		
	Currency Futures	USD/TRY Futures	EUR/TRY Futures
Open Orders - Buy	0	0	0
Open Orders - Sell	151,200	0	151,200
Traded Bought	27,500	27,500	0
Traded Sold	0	0	0
Traded Net	27,500	27,500	0
Total Buy	27,500	27,500	0
Total Sell	151,200	0	151,200
Total Net Buy	27,500	27,500	0
Total Net Sell	151,200	0	151,200

After scenario 4, open orders-sell, total sell, total net sell counters exceed the given limits at the instrument type level for currency futures and at the instrument class level for EUR/TRY futures contracts. New orders and amendments submitted in any of the series connected to USD/TRY and EUR/TRY futures contracts from Risk Group 5 will be rejected.

8.4   MARGIN CHECKS

Pre-trade and at-trade margin checks are enforced for each account.

8.4.1 PTRM and Clearing Integration

PTRM is always integrated with clearing system intraday and at the beginning of the day. Data such as account hierarchy, position information and risk parameters are received from RTM system at the beginning of the day. PTRM receives updated available collateral information and resolved trades on a "near real-time" basis after trades are processed by the RTM system.

RTM, component of clearing system responsible for real time margin calculations, listens to match events from the trading system and processes these trade events through a real-time margin system. As a trade is processed, RTM sends updated available collateral value and trade information resolved back to PTRM. This updated information is used to correct for the margin consumption that PTRM calculates based on its simplified pre-trade margin model. After receiving available collateral value updated with new trades, PTRM does not consume margin for the resolved trades.

8.4.2 Margin Check

Margin sufficiency is checked by comparing margin consumption with the available collateral. Margin consumption is calculated by pre-trade margin model which is a simplified margin calculation method developed for PTRM. Available collateral is calculated by clearing system using post-trade margin model.

Margin sufficiency is checked as below:

o Margin Consumption > Available Collateral ---> Reject order
o Margin Consumption ≤ Available Collateral ---> Accept order

Above margin checks prevent margin consumption to be higher than available collateral but margin consumption may be higher than available collateral after execution of open orders or after available collateral is updated with the post-trade transactions.
In the case where margin consumption exceeds the available collateral or the available collateral is negative for an account, breach will occur and the affected account will be in "risky" status. Risky accounts are not allowed to enter position increasing orders and can only enter position decreasing orders. Exchange may use mass-cancel configuration property which enables cancelation of long orders in breach state.

8.4.3 Pre-Margin Model

Pre-trade margin model is developed based on post-trade margin model and provides controlling the risk arising from both orders and trades. This model does not support intra-commodity spread charge, inter-commodity spread credit, short option minimum margin and net option value calculations which are considered by post margin model. It is a simplified algorithm featuring no latency impact on order transmission.

PTRM calculates margin consumption using the worst-case scenario applied to positions and open orders of an account on the basis of margin instrument group where each group represent an underlying asset. Margin instrument group is a group of instruments for which there may be certain margin offsetting among the instruments in the same group. Margin consumptions calculated for each margin instrument group are added together to find out the total margin consumption value for an account.

Exchange may use the configuration enabling open orders not to be included in margin consumption. Orders are not planned to be included in margin consumption calculations in the first stage of BISTECH system.

Below parameters are used by pre-margin model for margin consumption calculations.

8.4.3.1 Pre-Trade Margin Model Parameters

i.   Unit Margin, UM
Unit margin is the margin amount that would be required for one unit of the instrument series given a portfolio that contained no other instruments. RTM system calculates unit margin for both short and long position based on instrument series.

PTRM receives unit margin information from clearing system at the beginning of each day and uses as a base for margin calculations within the same day.

Considering the different risk profiles of participants and accounts, unit margin values calculated based on instrument series may be differentiated between accounts.

ii.   Unit Margin Coefficient, UMC

Unit margin coefficient is a scaling coefficient that will apply to unit margin values to provide control and tuning of the relative risk tolerance of the pre-trade margin model. Unit margin coefficient can be differentiated between accounts.

iii.   Open Orders Coefficient, OOC

Open order coefficient is a scaling coefficient that will apply to reduce the margin consumption for open orders. This coefficient can be differentiated between accounts.

iv.   Netting Coefficient, NC

Netting coefficient is used to scale the margin offsetting effect among the instruments in the same margin instrument group.

v.   Consumption Coefficient, CC

Consumption coefficient is used to scale the required margin value calculated by RTM and thus it is used for specifying the relative risk tolerance of the real-time margin system when compared to the calculations of the post-trade. This coefficient can be differentiated between accounts.

vi.   After-Hour Multiplier, AHM

After-hours multiplier is a scaling coefficient that will apply to scale the unit margin values during after-hours sessions.

8.4.3.2 Pre-Trade Margin Model

PTRM keeps a map of instrument-position objects for each instrument series for which positions and orders exist. Instrument-position objects store the following information which provides a basis for margin calculations of each account.

- LP   : Long Position (units)
- SP   : Short Position (units)
- RLP   : Resolved Long Position (units)
- RSP   : Resolved Short Position (units)
- OOLO   : Offsetting Long Orders (units)
- OOSO   : Offsetting Short Orders (units)
- NOLO   : Non-Offsetting Long Orders (units)
- NOSO   : Non-Offsetting Short Orders (units)
- TM   : Margin Consumed by Positions Only (in margin)
- MC   : Margin Consumed (in margin)

During margin consumption calculation, position and order information will be multiplied with below margin coefficients:

- MCOL = UMC * OOC * AHM * LUM (margin coefficient for open long orders)
- MCOS = UMC * OOC * AHM * SUM (margin coefficient for open short orders)
- MCPL = UMC * AHM * LUM (margin coefficient for long positions)
- MCPS = UMC * AHM * SUM (margin coefficient for short positions)

8.4.3.2.1 Margin Consumption Calculation for Non-Omnibus Accounts

Offset calculations among the instruments in the same margin instrument group are made on the quantity values multiplied by margin coefficients instead of the quantity values. For this reason, PTRM calculates below values considering the orders and trades for each instrument group.

Margin consumed by traded long positions for all instruments in the group (TL) : $\sum_{each\ instrument}(LP * MCPL)$

Margin consumed by traded short positions for all instruments in the group (TS) : $\sum_{each\ isntrument}(SP * MCPS)$

Margin consumed by non-offsetting long orders for all instruments in the group (NOL) : $\sum_{each\ instrument}(NOLO * MCOL)$

Margin consumed by non-offsetting short orders for all instruments in the group (NOS) : $\sum_{each\ instrument}(NOSO * MCOS)$

Margin consumed by offsetting long orders for all instruments in the group (OOL) : $\sum_{each\ instrument}(OOLO * MCOL)$

Margin consumed by offsetting short orders for all instruments in the group (OOS) : $\sum_{each\ isntrument}(OSO * MCOS)$

After above calculations worst-case scenario is calculated for each margin instrument group as below:

Margin consumed by net traded positions and all long open orders for all instruments in the group (ML) : Max (TL + NOL – (TS – OOL) * NC, 0)

Margin consumed by net traded positions and all short open orders for all instruments in the group (MS) : Max (TS + NOS – (TL – OOS) * NC, 0)

Margin Consumption (MC) : MC $_{margin\ instrument\ group}$ = max(ML, MS)

Margin consumptions calculated for each margin instrument group are added together to find out the total margin consumption value for an account.

MC $_{account}$ = $\sum_{margin\ instrument\ group} MC$

8.4.3.2.2 Margin Consumption Calculation for Omnibus Accounts

For omnibus accounts, there is no margin offsetting among the instruments in the same group. PTRM calculates below values considering the orders and trades of an omnibus account:

Margin consumed by net traded positions (MN):
(LP) * MCPL + (SP) * MCPS

Margin Consumed by net traded positions and all long open orders (ML):
MN + (NOLO * MCOL)– (OOLO * MCOS)

Margin Consumed by net traded positions and all short open orders (MS):
MN + (NOSO * MCOS)– (OOSO * MCOL)

Margin Consumed by net traded positions and all open orders (MB):
MN + (NOLO * MCOL) + (NOSO * MCOS)– (OOLO * MCOS) – (OOSO * MCOL)

After above calculations, worst-case scenario is calculated as below:

Margin Consumption (MC) : $MC_{account}= \max (MN, ML, MS, MB)$

8.4.3.3 Special Transactions for Margin Consumption Calculation

In this section, special transactions are described further for clarification.

8.4.3.3.1 Flexible Derivatives

Users can create tailor-made instruments within specified limits determined by the Exchange. PTRM waits to hear the unit margin values from the RTM system before processing the tailor-made instruments. Any transaction for which unit margin information is missing will be rejected by the pre-trade margin model.

8.4.3.3.2 Trade Reports and Advertising Orders

Trade reports and advertising orders consume margin at the time of entry as any other order type except that open order coefficient of "1" shall always be used for them. Trade reports and advertising orders shall be subject to rejection by pre-trade margin checks. At the time of execution, trades shall be processed as an execution like any other match event.

8.4.3.3.3 Linked Orders

When processing a linked order, PTRM evaluate which leg's instrument series has the largest unit margin and process with this leg.

- If the order is a buy order, the order will be processed as a single order for the instrument which has the largest long unit margin of all legs.

- If the order is a sell order, the order will be processed as a single order for the instrument which has the largest short unit margin of all legs.

8.4.3.3.4 Stop Orders

Stop orders may have conditions to be triggered by price or by session. Until the condition is realized, these orders are untriggered. Untriggered orders are not processed through margin checks at the time of entry. Triggered orders are evaluated for margin at the time of triggering. If a triggered order would breach the margin check it will be rejected at the time of activation.

8.4.3.3.5 Day and Good-Till-Cancelled Orders

Long-dated (GTC &GTD) orders are loaded into the system at the beginning of each day and are not be subject to any margin check in this step. PTRM do not reject or cancel any orders which cause margin breach during the reload process. These orders are evaluated after completion of reloading. Any account in breach state after reloading orders will be set to breach state.

8.4.3.3.6 Inactive Orders

Orders inactivated by users (local inactivation) do not consume margin after inactivation. Orders inactivated by the system (central inactivation) consume margin after inactivation and therefore do not consume any additional risk at the time of activation.

8.4.3.3.7 Combination Instruments

When processing a roll-over combination transaction or tailor-made combination transaction, PTRM process each leg of the combination transaction as an independent transaction. If the processing of all legs causes a margin breach event, then the entire transaction will be rejected.

8.4.3.4 Margin Calculation Examples

In this section, sample margin consumptions are calculated for different portfolios using pre-trade margin model. In order to clarify the effect of orders and transactions on margin consumption calculated by pre-trade margin model, integration between PTRM and clearing system are not considered in these examples. In production environment, PTRM and clearing system will be integrated. Clearing system listens trades from the trading system and processes these trade events through a "real-time margin" system. PTRM receives updated available collateral information and resolved trades on a "near real-time" basis after trades are processed by the RTM system.

Parameters used in the examples are determined as below:

Open Orders Coefficient: 0,5
Netting Coefficient: 1
Unit Margin Coefficient: 1
Unit Margin:

Instrument	Unit Margin (Long)	Unit Margin (Short)
F_XU0300416	900 TRY	900 TRY
F_XU0300616	900 TRY	900 TRY
F_XU0300816	900 TRY	900 TRY
O_XU030E0416C108.000	60 TRY	650 TRY
O_XU030E0416C100.000	300 TRY	820 TRY
O_XU030E0416C94.000	700 TRY	875 TRY
O_XU030E0616P92.000	105 TRY	470 TRY

O_XU030E0616P100.000	260 TRY	660 TRY
O_XU030E0616P106.000	465 TRY	570 TRY

8.4.3.4.1 Margin Consumption Calculation for Portfolios Including Futures in the Same Margin Instrument Group

Example 1: Margin Consumption Calculation for Orders on Futures Contracts

Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption
-	-	1 buy - F_XU0300416	450 TRY
-	1 buy - F_XU0300416	1 sell - F_XU0300416	450 TRY
-	1 buy - F_XU0300416 1 sell - F_XU0300416	2 sell - F_XU0300416	1350 TRY
-	1 buy - F_XU0300416 3 sell - F_XU0300416	2 buy - F_XU0300616	1350 TRY
-	1 buy - F_XU0300416 3 sell - F_XU0300416 2 buy - F_XU0300616	1 buy - F_XU0300616	1800 TRY

Example 2: Margin Consumption Calculation for Positions on Futures Contracts

Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption
4 long - F_XU0300416	-	-	3600 TRY
4 long - F_XU0300416 4 short - F_XU0300616	-	-	0 TRY
4 long - F_XU0300416 5 short - F_XU0300616	-	-	900 TRY

Example 3: Margin Consumption Calculation for Positions and Orders on Futures Contracts

Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption
4 long - F_XU0300416	-	1 sell - F_XU0300616	3600 TRY
4 long - F_XU0300416	1 sell - F_XU0300616	15 sell - F_XU0300616	3600 TRY

4 long - F_XU0300416	16 sell - F_XU0300616	1 sell - F_XU0300616	4050 TRY
4 long - F_XU0300416	17 sell - F_XU0300616	2 buy - F_XU0300816	4500 TRY

8.4.3.4.2 Margin Consumption Calculation for Portfolios Including Option Contracts in the Same Instrument Group

Example 1: Margin Consumption Calculation for Orders on Option Contracts

Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption
-	-	1 buy - O_XU030E0416C100.000	150 TRY
-	1 buy - O_XU030E0416C100.000	1 sell - O_XU030E0416C100.000	410 TRY
-	1 buy - O_XU030E0416C100.000 1 sell – O_XU030E0416C100.000	1 sell - O_XU030E0616P92.000	645 TRY

Example 2: Margin Consumption Calculation for Positions on Option Contracts

Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption
4 long - O_XU030E0416C100.000	-	-	1200 TRY
4 long - O_XU030E0416C100.000 4 short - O_XU030E0416C108.000	-	-	1400 TRY
4 long - O_XU030E0416C100.000 4 short - O_XU030E0416C108.000 1 short - O_XU030E0616P92.000	-	-	1870 TRY

Example 3: Margin Consumption Calculation for Positions and Orders on Option Contracts

Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption
4 long - O_XU030E0416C100.000	-	1 short - O_XU030E0416C100.000	1200 TRY

4 long - O_XU030E0416C100.000	1 sell - O_XU030E0416C100.000	1 short - O_XU030E0616P92.000	1200 TRY
4 long - O_XU030E0416C100.000 1 short - O_XU030E0616P92.000	1 sell - O_XU030E0416C100.000	1 short - O_XU030E0616P92.000	730 TRY

8.4.3.4.3 Margin Consumption Calculation for Portfolios Including Futures and Option in the Same Instrument Group

Example 1: Margin Consumption Calculation for Orders on Futures and Option Contracts

Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption
-	-	1 buy - F_XU0300416	450 TRY
-	1 buy - F_XU0300416	1 sell - O_XU030E0416C100.000	450 TRY
-	1 buy - F_XU0300416 1 sell- O_XU030E0416C100.000	1 sell - F_XU0300616	860 TRY
-	1 buy - F_XU0300416 1 sell - F_XU0300616 1 sell- O_XU030E0416C100.000	2 buy - F_XU0300416	1350 TRY

Example 2: Margin Consumption Calculation for Positions on Futures and Option Contracts

Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption
4 long - F_XU0300416	-	-	3600 TRY
4 long - F_XU0300416 4 short - O_XU030E0416C100.000	-	-	320 TRY
4 long - F_XU0300416 4 short - O_XU030E0416C100.000 1 short - F_XU0300616	-	-	580 TRY

Example 3: Margin Consumption Calculation for Positions and Orders on Futures and Option Contracts

Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption
4 long - F_XU0300416	-	1 sell - O_XU030E0416C100.000	3600 TRY
4 long - F_XU0300416	1 sell - O_XU030E0416C100.000	11 sell - O_XU030E0416C100.000	3600 TRY
4 long - F_XU0300416	12 sell - O_XU030E0416C100.000	6 sell - O_XU030E0416C100.000	3780 TRY
4 long - F_XU0300416	18 sell - O_XU030E0416C100.000	1 buy - F_XU0300816	4050 TRY

8.4.3.4.4 Margin Consumption Calculation for Omnibus Accounts

Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption
4 long - F_XU0300416	-	-	3600 TRY
4 long - F_XU0300416	-	1 sell - F_XU0300416 (position closing)	3600 TRY
4 long - F_XU0300416	1 sell - F_XU0300416 (position closing)	8 sell - F_XU0300416 (position closing)	4050 TRY
4 long - F_XU0300416	9 sell - F_XU0300416 (position closing)	1 sell - F_XU0300416	4500 TRY
4 long - F_XU0300416	9 sell - F_XU0300416 (position closing) 1 sell- F_XU0300416	1 buy - F_XU0300416	4950 TRY

8.4.3.5 Relationship Between Margin Consumption and Available Collateral

In this section, sample margin consumptions are calculated considering the integration between PTRM and Clearing System.

Below parameters will be used in the examples:

Open Orders Coefficient: 0,5
Netting Coefficient: 1
Unit Margin Coefficient: 1
Unit Margin:

Instrument	Unit Margin (Long)	Unit Margin (Short)

F_XU0300416	900 TRY	900 TRY

Assume that an account enters two buy orders on F_XU0300416 contract consecutively and one of these buy orders is matched. Margin consumption and available collateral are calculated for each step and results are as below:

	Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption	Available Collateral
Order Entry	0	0	1 (buy)	450 TRY	2.300 TRY
Order Entry	0	1 (buy)	1 (buy)	900 TRY	2.300 TRY
Transaction	1 (long)	1 (buy)	0	1.350 TRY	2.300 TRY
RTM Update	1 (long)*	1 (buy)	0	450 TRY	1.400 TRY

After RTM receives latest match event, it processes this trade event and send updated available collateral value and trade information resolved back to PTRM. It is assumed that there is no change in profit/loss at this stage. Required margin is calculated using post-margin model by RTM and available collateral which was 2,300 is updated as 1.400 TRY. Since PTRM does not consume margin for the resolved trades, margin consumption which was 1,350 is updated as 450 TRY.

8.4.3.6 Margin Check

Assume that the account having the portfolio in the previous example enter 3 buy and 1 buy order consecutively to the F_XU0300416 contract.

As it is seen below table, when three buy orders sent to the F_XU0300416 contract, margin consumption value of 1.800 TRY is higher than the available collateral of 1.400 TRY and thus order is rejected.

Margin Consumption > Available Collateral ---> Order Rejected

	Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption	Available Collateral
Order Entry	0	0	1 (buy)	450 TRY	2.300 TRY
Order Entry	0	1 (buy)	1 (buy)	900 TRY	2.300 TRY
Transaction	1 (long)	1 (buy)	0	1.350 TRY	2.300 TRY
RTM Update	1 (long)*	1 (buy)	0	450 TRY	1.400 TRY

	Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption	Available Collateral
Order Entry	1 (long)*	1 (buy)	3 (buy)	1.800 TRY	1.400 TRY

When buy order with quantity 1 is entered on F_XU0300416 contract, margin consumption is calculated as 900 TRY which is lower than 1.400 TRY and thus order is accepted.

Margin Consumption ≤ Available Collateral ---> Order Accepted

	Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption	Available Collateral
Order Entry	0	0	1 (buy)	450 TRY	2.300 TRY
Order Entry	0	1 (buy)	1 (buy)	900 TRY	2.300 TRY
Transaction	1 (buy)	1 (buy)	0	1.350 TRY	2.300 TRY
RTM Update	1 (buy)*	1 (buy)	0	450 TRY	1.400 TRY
Order Entry	1 (buy)*	1 (buy)	1 (buy)	900 TRY	1.400 TRY

8.4.3.7 Margin Breach

Assume that the buy order entered in previous example is matched. After RTM receives latest match event, it processes this trade event and send updated available collateral value to PTRM. It is assumed that there is 100 TRY loss at this stage. Required margin is calculated using post-margin model by RTM and available collateral which was 1,400 is updated as 400 TRY considering the latest required margin and profit/loss values. Since PTRM does not consume margin for the resolved trades, margin consumption which was 1,350 is updated as 450 TRY. Since margin consumption exceeds the available collateral, breach will occur and the affected account will be in "risky" status. This account is not allowed to enter position increasing orders and can only enter position decreasing orders.

	Number of Position	Open Order Quantity	Submitted Order Quantity	Margin Consumption	Available Collateral
Order Entry	0	0	1 (buy)	450 TRY	2.300 TRY
Order Entry	0	1 (buy)	1 (buy)	900 TRY	2.300 TRY
Transaction	1 (long)	1 (buy)	0	1.350 TRY	2.300 TRY
RTM Update	1 (long)*	1 (buy)	0	450 TRY	1.400 TRY

Order Entry	1 (long)*	1 (buy)	1 (buy)	900 TRY	1.400 TRY
Transaction	2 (long)	1 (buy)	0	1.350 TRY	1.400 TRY
RTM Update	2 (long)*	1 (buy)	0	450 TRY	400 TRY

8.5   POSITION LIMIT CHECK

Position limits will be enforced by PTRM on the concentration of derivatives instruments within a single investor (investor-based position limit) or whole market (market-based position limit). In breach state, position increasing order entry is not allowed. Exchange may use mass-cancel configuration property which enables cancelation of long orders in breach state. Principal of position limits are available at Procedure on Central Counterparty Service provided by Takasbank.

ANNEX – 5

SESSION STATES AND APPLICABLE ORDER TYPES

9 ANNEX 5: SESSION STATES and APPLICABLE ORDER TYPES

Table 1a: Session States will be valid with Phase-2 Go-Live	
SESSION STATE	**EXPLANATIONS**
VIOP_ARA	Session state used either for non trading transition period of user-defined flexible contracts until necessary risk checks are performed or during lunch-break
	Order entry and/or update are not allowed
	Orders can be deleted
	Trade reporting is not allowed
VIOP_DURDURMA	Session state used for trading halt
	Order entry, update or delete are not allowed
	Trade reporting is not allowed
VIOP_GUNSONU_N	Session state used for implying the end of normal trading day
	Order entry, update or delete are not allowed
	Day orders orders are deleted by the system automatically
	Trade reporting is not allowed
VIOP_SEANS_ONCESI	Session state used for non-trading period from system start-up to continuous matching (or fixing if applicable) session
	Users can log in and make queries
	Order entry is not allowed
	Trade reporting is not allowed
	Flexible contracts cannot be generated
	GTD or GTC orders can be deleted
	GTD or GTC orders can be updated by either reducing quantity or worsening price
	Inactive orders can be entered
VIOP_SEANS_SONU	Session state used for calculating settlement prices
	Order entry and/or update are not allowed
	Orders can be deleted
	Trade reporting is not allowed
VIOP_SUREKLI_MZYD	Session state used for continuous matching based on price and time priority respectively
	Orders can be entered with different type and validity attributes (see Table-2)
	Trade reporting can be performed
	Flexible contracts can be generated
	Orders can be updated
	Orders can be deleted or inactivated
	Inactive orders can be activated and sent to the system

Table 1a: Session States will be valid with Phase-2 Go-Live	
SESSION STATE	**EXPLANATIONS**
VIOP_UF_ILANI	Session state used for publishing calculated settlement prices and other official price statistics
	Order entry, update or delete are not allowed
	Trade reporting is not allowed
VIOP_YAYIN	It is the session situation which is created in order to ensure that the end-of-day statistics information can be worked correctly regarding the data broadcast.

- **VIOP_ARA:** SESSION BREAK
- **VIOP_DURDURMA:** SUSPENSION
- **VIOP_GUNSONU_N:** END OF DAY
- **VIOP_SEANS_ONCESI:** PRE TRADE SESSION
- **VIOP_SEANS_SONU:** END OF SESSION
- **VIOP_SUREKLI_MZYD:** CONTINUOUS AUCTION
- **VIOP_UF_ILANI:** SETTLEMENT PRICE ANNOUNCEMENT
- **VIOP_AS_ONCESI:** PRE EVENING SESSION
- **VIOP_AS_SONU:** END OF EVENING SESSION
- **VIOP_AS_SUREKLI_MZYD:** EVENING SESSION CONTINUOUS AUCTION
- **VIOP_GUNSONU:** END OF DAY
- **VIOP_KAP_ESLESTIRME:** ON CLOSE ORDERS MATCHING
- **VIOP_SEANS_ONCESI_AH:** PRE AFTER HOURS SESSION
- **VIOP_SS_ONCESI:** PRE MORNING SESSION
- **VIOP_SS_SONU:** END OF MORNING SESSION
- **VIOP_SS_SUREKLI_MZYD:** MORNING SESSION CONTINUOUS AUCTION
- **VIOP_YAYIN:** BROADCAST

Table 1b: Session States will be implemented in Future	
SESSION STATE	**EXPLANATIONS**
VIOP_AS_ONCESI	Session state used for non-trading period from end of normal session to evening (off-hour) continuous matching session
	Order entry is not allowed
	Trade reporting is not allowed
	GTD or GTC orders can be deleted
	Off-hour flagged GTD or GTC orders can be updated by either reducing quantity/time or worsening price
	Price statistics of normal session are reset (except open interest, base price, settlement price, lower and upper limits)

SESSION STATE	EXPLANATIONS
VIOP_AS_SONU	Session state used for non-trading period from end of evening (off-hour) continuous matching session to system close
	Order entry and/or update are not allowed
	Orders can be deleted
	Trade reporting is not allowed
VIOP_AS_SUREKLI_MZYD	Session state used for evening (off-hour) continuous matching based on price and time priority respectively
	Off-hour flagged orders can be entered with different type and validity attributes (see Table-2)
	Trade reporting is not allowed
	Flexible contracts cannot be generated
	Orders can be updated by changing price/quantity or reducing validity
	Orders can be deleted or inactivated
VIOP_GUNSONU	Session state used for implying the end of normal session for after hours markets.
	Order entry, update or delete are not allowed
	Day orders are deleted by the system automatically
	Trade reporting is not allowed
VIOP_KAP_ESLESTIRME	Session state used for automatic matching of on-close (KAP) orders
	Order entry, update or delete are not allowed
VIOP_SEANS_ONCESI_AH	Session state used for implying start of normal session for after hours markets
	Order entry is not allowed
	Trade reporting is not allowed
	Flexible contracts cannot be generated
	GTD or GTC orders can be deleted
	GTD or GTC orders can be updated by either reducing quantity or worsening price
	Price statistics of off-hour sessions are reset (except open interest, base price, settlement price, lower and upper limits)
VIOP_SS_ONCESI	Session state used for non-trading period from system start-up to morning (off-hour) continuous matching session
	Order entry is not allowed
	Trade reporting is not allowed
	GTD or GTC orders can be deleted

Table 1b: Session States will be implemented in Future

Table 1b: Session States will be implemented in Future	
SESSION STATE	**EXPLANATIONS**
	Off-hour flagged passive GTD or GTC orders can be updated by either reducing quantity/time or worsening price
	Price statistics of previous day's evening (off-hour) session are carried as they are
VIOP_SS_SONU	Session state used for non-trading period from end of morning (off-hour) continuous matching session to start of normal session
	Order entry and/or update are not allowed
	Orders can be deleted
	Trade reporting is not allowed
	Off-hour flagged daily passive orders are deleted by the system automatically
VIOP_SS_SUREKLI_MZYD	Session state used for morning (off-hour) continuous matching based on price and time priority respectively
	Off-hour flagged orders can be entered with different type and validity attributes (see Table-2)
	Trade reporting is not allowed
	Flexible contracts cannot be generated
	Orders can be updated by changing price/quantity or reducing validity
	Orders can be deleted or inactivated

Notes:

1- Aforementioned session states might be changed, deleted or new session states might be added by the Exchange with a prior notice.
2- GTD: Good-Till-Date
   GTC: Good-Till-Cancel

Table-2: Valid Order Attributes per Session State

Session States	Order Type							Order Validity						Order Update/Delete						Other	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	R	S	T	U	V	Y
VIOP_ARA	0	0	0	0	0*	0*	0*	0	0	0	0	0	0*	0	0	0	0	0	0	1	0	1
VIOP_DURDURMA	0	0	0	0	0*	0*	0*	0	0	0	0	0	0*	0	0	0	0	0	0	0	0	0
VIOP_GUNSONU_N	0	0	0	0	0*	0*	0*	0	0	0	0	0	0*	0	0	0	0	0	0	0	0	0
VIOP_SEANS_ONCESI	0	0	0	0	0*	0*	0*	0	0	0	0	0	0*	1	0	0	1	0	0	1	0	1
VIOP_SEANS_SONU	0	0	0	0	0*	0*	0*	0	0	0	0	0	0*	0	0	0	0	0	0	1	0	1
VIOP_SUREKLI_MZYD	1	1	1	1	1*	1*	1*	1	1	1	1	1	1*	1	1	1	1	1	1	1	1	1
VIOP_UF_ILANI	0	0	0	0	0*	0*	0*	0	0	0	0	0	0*	0	0	0	0	0	0	0	0	1
VIOP_AS_ONCESI	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	1*	0*	0*	1*	0*	0*	1*	0*	1*
VIOP_AS_SONU	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	1*	0*	1*
VIOP_AS_SUREKLI_MZYD	1*	1*	1*	1*	0*	0*	0*	1*	1*	1*	0*	0*	1*	1*	1*	1*	1*	1*	0*	1*	0*	1*
VIOP_GUNSONU	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	1*	0*	0*
VIOP_KAP_ESLESTIRME	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	1*
VIOP_SEANS_ONCESI_AH	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	1*	0*	0*	1*	0*	0*	1*	0*	1*
VIOP_SS_ONCESI	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	1*	0*	0*	1*	0*	0*	1*	0*	1*
VIOP_SS_SONU	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	1*	0*	1*
VIOP_SS_SUREKLI_MZYD	1*	1*	1*	1*	0*	0*	0*	1*	1*	1*	0*	0*	1*	1*	1*	1*	1*	1*	0*	1*	0*	1*
VIOP_YAYIN	0	0	0	0	0*	0*	0*	0	0	0	0	0	0*	0	0	0	0	0	0	0	0	0

Remarks for Valid Order Attributes per Session State Table	
Order Type:	
A	Limit
B	Market
C	Market to Limit
D	Stop
E	Advertising
F	On close (KAP)
G	Linked Order
Order Validity:	
H	Day
I	Fill and Kill (FaK)
J	Fill or Kill (FoK)
K	Good till Date (GTD)
L	Good till Cancel (GTC)
M	Off-hour
Order Update/Delete:	
N	Decrease quantity
O	Increase quantity
P	Price improve
R	Price worsen
S	Decrease validity
T	Increase validity
U	Order delete
V	Trade Reporting
Y	Order depth information
1	Available (valid at start)
1*	Available (not implemented initially)
0	Not available (valid at start)
0*	Not available (not implemented initially)

ANNEX – 6

ORDERS TYPES AND EXAMPLES

10 Annex 6: General Information on Orders

In this section, order types will be explained in detail. Apart from new order types, there will be some changes in current order types.

10.1 Order Types

10.1.1 Market Orders

These are the orders entered stating only the quantity without any price. Such orders are executed by matching the best price orders at the other side. If there is no order at the other side, they are cancelled automatically.

10.1.1.1Market Order Operation Principles

- They make out a trade by matching starting with the best priced order at the counter side until it is filled.

- If there are no orders to match with on the counter side, they are automatically cancelled.

- Market Orders may be submitted just as FaK and FoK.

  o **Market (FaK)** : After having generated a trade with the best priced order on the counter side, the remaining quantity is cancelled.

  o **Market (FoK)** : It is crucial that the entire order quantity is fulfilled, if not the entire order is cancelled.

10.1.1.2 Examples Regarding Market Orders

Orders at a continous trading of a contract are as follows (before the entry of a market order):

BUY		SELL	
Amount	Price	Price	Amount
100	10.50	11.00	80
90	10.45	11.05	90
80	10.40	11.10	100

In the event that a market buy order with a qty. of 150 is entered whilst the order book is like the table above, 80 out of the 150 is matched at 11.00 price level and the remaining 70 is matched at 11.05 price level.

Status of the orders after the market order is traded:

BUY		SELL	
Amount	Price	Amount	Price
100	10.50	11.05	20
90	10.45	11.10	100
80	10.40		

10.1.2 Market to Limit Orders

Market to Limit orders are orders entered without price and only with quantity like market orders. They are only executed by matching with the order at the best price level of the counter party. However the remaining part is turned into a limit order based on the last trade price and is stored in the order book. A market to limit order will be rejected if there are no orders on the opposite side of the order book in continious trading.

10.1.2.1 Market to Limit Operating Principles

- They are only executed by matching up with the best price level order in the counter pary.

- If the entered order is partially executed the unmatched part of the entered order is recorded as a passive limit order with price of the trade.

- Market to Limit orders can be used with FaK, FoK, Day, GTD and GTC order conditions.

   o **Market to Limit (FaK) :** They are only traded with the best price level of the counter side. Remaining part is cancelled.
   o **Market to Limit (FoK) :** It is crucial that the entire order is executed, if can not be executed in full the entire order is cancelled.

   o **Market to Limit (Day):** They are only traded with the best price level of the counter side. Remaining part is recorded as a passive limit order at trade price until the end of the day.

   o **Market to Limit (GTD):** They are only traded with the best price level of the counter side. Remaining part is recorded as a passive limit order at the trade price until the end of the stated date.

   o **Market to Limit (GTC):** They are only traded with the best price level of the counter side. Remaining part is recorded as a passive limit order at the trade price and it is valid until it is cancelled. Good till cancel orders are valid until the maturity of the

contract and will be automatically cancelled by the system at the end of maturity, unless cancelled, or matched. the end of the stated date.

10.1.2.2 Examples for market to limit orders

Orders in the orderbook during continuous trading are as follows (before a market to limit order is entered):

BUY		SELL	
Amount	**Price**	**Price**	**Amount**
80	0.9950	0.9985	40
50	0.9845	1.0050	100
120	0.9800	1.0150	70

In the event that a buy market to limit order with 70 qty. is entered whilst the order book is like the table above, 40 out of the 70 buy market to limit order is traded at 0.9985 price level and the remaining 30 is recorded as a passive buy limit order at 0.9985 price level.

The status of the orders after the market to limit order is matched:

BUY		SELL	
Amount	**Price**	**Price**	**Amount**
30	0.9985	1.0050	100
80	0.9950	1.1015	70
50	0.9845		
120	0.9800		

10.1.2.3 Differences between Market to Limit and Market Orders:

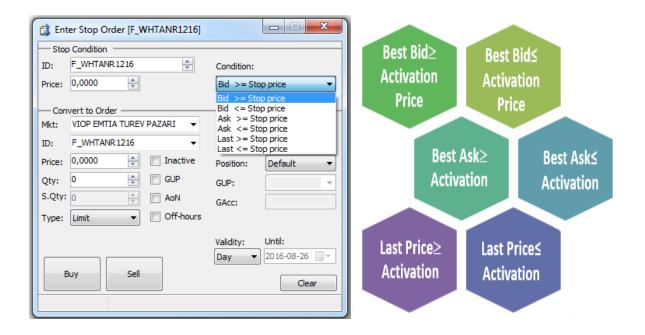| Specifications	Market Orders	Market to Limit Orders
Matching	An unpriced order that will execute against the counter orders at best price level and, if not fully filled, against the orders at worse price levels until it executes completely.	**They are only matched with the counter orders at the best price level**.
Remaining qty after matching	Cancelled.	**The remaining qty has stored as a passive limit order with the matching price.**
Validity	FaK, FoK	FaK, FoK, Day, GTD, GTC

10.1.3 Limit Order

A limit order is the order method which is used to realize orders at prices of up to the determined price level. Price and quantity must be entered when this method is used.

10.1.4 Stop Orders

Orders that are activated or executed in the order book of the related contract (or another one defined in the same partition) in case the trading price or the best bid-offer prices in the order book reaches a certain level which was specified as condition at the order entry.

- They are entered based on a certain price condition.
- Order is activated in case an order is entered or a trading is made at the set condition price with which the stop order is entered. (The order is triggered when the specified condition is filled)
- In current system activation condition is controlled after the stop order is entered. But in BISTECH system activation condition will be controlled whit the passive orders that are existing in the system.
- Order is active in the order book until its stop condition is met.
- Contracts that stop orders are entered should be in the same partition with contracts that are used for stop condition. Other instruments traded in BISTECH system can be placed as stop condition sending stop orders to contracts in the same partition traded at VIOP via FIX users. TW users can only place other contracts in the same partition traded at VIOP as stop condition sending stop orders to contracts traded at VIOP.
- Orders will never be activated even if instruments not traded in BISTECH system and underlyings such as D_USDTRY, D_XU030D, XU030 etc. can be placed as stop condition.
- Stop orders that are sent via FIX with stop condition as other instruments traded in markets excepting VIOP can not be amended via TW. These orders can only be cancelled.
- Stop orders that are sent via FIX with stop condition as other instruments traded in VIOP markets can be amended and cancelled via TW. In case of amendment on instrument placed as stop condition, TW cancels the old order and send an order with new order number.
- Stop conditions can not be amended via FIX. In case of this, the order should be cancelled, and a new order should be sent.

Example 1: Buying Condition

Step 1: Orders entered are as follows (Before entering stop order):

Buy		Sell	
Number of Shares	Price	Price	Number of Shares
10	8.50	9.00	10
10	8.40	9.10	10

As the order book is as provided in the table above, Market Order is entered with the condition **Buy ≥ 8.60** for 10 shares. The order is not in the order book until the **condition** is filled (until a buy order is entered at 8.60 or a higher price).

Step 2: A buy order with 10 shares and limit price of 8.70 is entered, the condition of the Stop order that was entered in the previous step shall be triggered (Buy ≥ 8.60), therefore order (Market) is converted into trade upon being matched with the order for 10 qty. pending at a price of 9.00 at the sell side. The order book will be as follows after the trading:

Buyer		Seller	
Number of Shares	Price	Price	Number of Shares
10	8.70	9.10	10
10	8.50		
10	8.40		

Example 2: Selling Condition

Step 2: Orders entered are as follows (Before entering stop order):

Buy		Sell	
Number of Shares	**Price**	**Price**	**Number of Shares**
10	8.50	9.00	10
10	8.40		

As the order book is as provided in the table above, buy order is entered with the condition **Sell ≤8.70** for 10 shares at 8.60 limit price. The order does not appear in the order book until the **condition** is filled (until a sell order is entered at 8.70 or a lower price).

Step 2: A sell order is received at a limit price of 8.70. Thus the Stop order is entered as a passive on the buy side of the order book at a price of 8.60 since the limit price condition of the Stop order entered in the previous step will be triggered (Selling ≤ 8.70).

Buy		Sell	
Number of Shares	**Price**	**Price**	**Number of Shares**
10	8.60	8.70	10
10	8.50	9.00	10
10	8.40		

Example 3: Trade Condition

Step 1: The orders entered are as follows:

Buy		Sell	
Number of Shares	**Price**	**Price**	**Number of Shares**
10	8.70	9.00	10
10	8.40		

As the order book is as provided in the table above, buy order is entered with the condition **Last Trade ≤8.70** for 10 shares at a limit price of 8.60. The order does not appear in the order book until the **condition** is met (until a trade is made at a price of 8.70).

Step 2: In case a Market sell order for 10 qty is entered, this order will be matched with the buy order for 10 qty. pending at a price of 8.70 and the trade is made. In this case, the Stop

order is recorded as a passive buy order at a price of 8.60 in the order book since the condition of the Stop order entered in the previous step will be triggered (Last Trade ≤ 8.70).
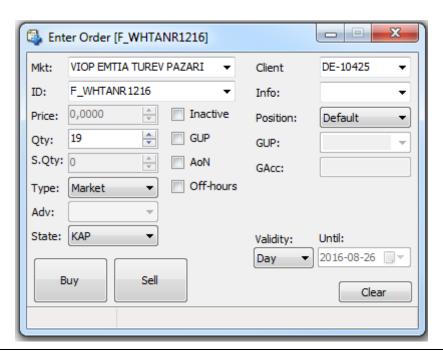
Buyer		Seller	
Number of Shares	Price	Price	Number of Shares
10	8.60	9.00	10
10	8.40		

10.1.5 Session Orders

The condition for session orders specifies the session until the order shall remain in effect. The order will be canceled in a transition to a session not included in the current Session Type. In cases where the same Session Type is run multiple times during a day, the order will expire on the earliest possible occasion.
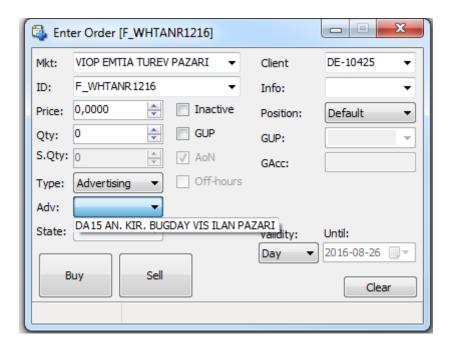
10.1.6 On Close Orders

- On close orders are used to trades at the end of day settlement price.

- After end of day settlement price announcement, on close orders match counter on close orders. After on close orders matching, if there is remaining buy or sell on close orders, these orders match the remaining counter orders from normal session according to time and price priority. Unmatched on close orders are cancelled at the end of the day automatically.

- On close orders can be entered as FaK and Market order. And their State must be KAP.

10.1.7 Advertising Orders

Advertising orders may be used when one side of the trade report is definite. These orders can be entered via normal order entry screens from Trading Workplaces. Advertising orders are subject to the same rules with trade reports. These orders will be published to the market in advertising order book screen. When a counterparty hit, orders are matched with the full quantity. Advertising orders can only be entered via trading workplaces.
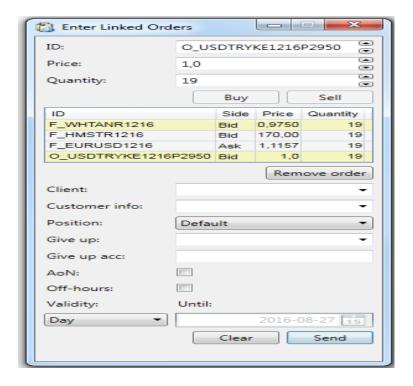

10.1.8 Linked Orders

- Linked orders give opportunity to trade either one or other instruments for participant. The maximum number of the legs that a linked order entered in the system is 10. The legs can be either buy or sell.
- Every match made on a linked order results in decrementing a proportional quantity in all its linked legs.
- By any reason (user cancellation, risk controls and so on) in case of cancellation of one leg depend all the other orders are cancelled automically by the system.
- Linked orders can be used with Limit order, Day, FaK or FoK.

Example :

Step 1: The link order entered is as follow (Order book is empty for all contracts and quantity is 19):

Step 2: When a market sell order with a quantity 5 is entered to F_HMSTR1216, this 5 will match with waiting order F_HMSTR1216 and waiting order F_HMSTR1216 contract quantity remains with a quantity 14. Because of this trade linked order quantity also decrease to 14.

Step 2: The order entered to F_WHTANR1216 is cancelled. After this all orders that belongs to linked order will be cancelled.

10.2 Amendment Allowed on Orders and Time Priority

With transition to BISTECH system, the changes and time priorities that can be made to the elements of the orders in the order book during the continuous trading session are shown in the table below.

Field	Possible Changes	Priority Protection
Market	May not be changed	-
Contract	May not be changed	-
Account Number	May be changed (not valid for orders in the order book)	-
Position	May be changed	Yes
Order Type	May not be changed	-
Price	May be changed	No
Quantity	May be increased/decreased	No/Yes

Validity	May be changed	No
Off-hours	May be changed	No
Stop Condition Price	Yes	It is placed to the last, within the orders waiting in the same activation price.
Validity period	May be increased/decreased	No/Yes
Info	Yes	Yes

When it is desired to amend condition terms by trading workstation in stop orders, the existing order is deleted, and an order with the new order number is created. Condition terms in stop orders can not be amended via other connection protocols.

ANNEX– 7

MATCHING EXAMPLES OF STANDARD STRATEGY CONTRACTS

11 ANNEX 7: MATCHING EXAMPLES OF STANDARD STRATEGY CONTRACTS

EXAMPLE-1:

Strategy Contract   :F_USDTRYM2-M1 (buy leg2 and sell leg1)
Leg-1 (closest expiration) :F_USDTRY0616   (Base Price=2,9685)
Leg-2 (next expiration)   :F_USDTRY0716   (Base Price=2,9912)

Order Books at beginning

Contract   :F_USDTRY0616
Best Bid   :2,9800 (quantity=100)
Best Offer   :3,0000 (quantity=100)

Contract   :F_USDTRY0716
Best Bid   :3,0500 (quantity=100)
Best Offer   :3,1000 (quantity=100)

Contract   :F_USDTRYM2-M1
Best Bid   :—
Best Offer   :—

Action-1

If a limit buy order @ Price=0,13 and Quantity=20 is sent to strategy contract, following trades would be realized between counterparties of strategy order and plain orders in legs as the price of order meets implied spread value in legs ($0,13 \geq (3,1000 - 2,9800)$)

Trade-1   : F_USDTRY0616 @ Price=2,98 and Quantity=20
Trade-2   : F_USDTRY0716 @ Price=3,10 and Quantity=20

Action-2

If a limit sell order @ Price=0,04 and Quantity=20 is sent to strategy contract, following trades would be realized between counterparties of strategy order and plain orders in legs as the price of order meets implied spread value in legs ($0,04 \leq (3,0500 - 3,0000)$)

Trade-1   : F_USDTRY0616 @ Price=3,00 and Quantity=20
Trade-2   : F_USDTRY0716 @ Price=3,05 and Quantity=20

EXAMPLE-2:

Strategy Contract   :F_XU030M2-M1 (buy leg2 and sell leg1)
Leg-1 (closest expiration) :F_XU0300616   (Base Price=94,250)
Leg-2 (next expiration)   :F_XU0300816   (Base Price=95,575)

Order Books at beginning

Contract   :F_XU0300616
Best Bid   :96,500 (quantity=100)

Best Offer   :100,000 (quantity=100)

Contract   :F_XU0300816
Best Bid   :98,750 (quantity=100)
Best Offer   :102,900 (quantity=100)

Contract   :F_XU030M2-M1
Best Bid   :—
Best Offer   :—

Action-1

If a limit buy order @ Price=6,150 and Quantity=20 is sent to strategy contract, any trades would be realized and strategy order would wait in order book as the price of order does not meet implied spread value in legs. (6,150 < (102,900 – 96,500)

If an active market sell order (Quantity=20) is sent to strategy contract in that stage, strategy orders would be matched with each other and system would generate following trades automatically in legs (calculate prices) which meet price of strategy order or spread. There would not be any update for orders in legs.

Trade-1   : F_XU0300616 @ Price=96,625 and Quantity=20
Trade-2   : F_XU0300816 @ Price=102,775 and Quantity=20

Action-2

If a limit sell order @ Price= −1,000 and Quantity=20 is sent to strategy contract, any trades would be realized and strategy order would wait in order book as the price of order does not meet implied spread value in legs. (−1,000 > (98,750 – 100,000)

If an active market buy order (Quantity=20) is sent to strategy contract in that stage, strategy orders would be matched with each other and system would generate following trades automatically in legs (calculate prices) which meet price of strategy order or spread. There would not be any update for orders in legs.

Trade-1   : F_XU0300616 @ Price=99,900 and Quantity=20
Trade-2   : F_XU0300816 @ Price=98,900 and Quantity=20

ANNEX – 8

TRADING SESSIONS

12 ANNEX 8: TRADING SESSIONS

12.1   Full Days

	EQUITY DERIVATIVES MARKET (TSS=DRV_TS_EQ_FD)	
	Session State	**Time**
1	VIOP_SEANS_ONCESI	07:00:00
2	VIOP_SUREKLI_MZYD	09:30:00
3	VIOP_SEANS_SONU	18:10:00
4	VIOP_UF_ILANI	18:55:00+
5	VIOP_GUNSONU_N	19:00:00+
6	VIOP_YAYIN	23:30:00+

	REMAINING DERIVATIVES MARKETS (TSS=DRV_TS_OT_FD)	
	Session State	**Time**
1	VIOP_SEANS_ONCESI	07:00:00
2	VIOP_SUREKLI_MZYD	09:30:00
3	VIOP_SEANS_SONU	18:15:00
4	VIOP_UF_ILANI	18:55:00+
5	VIOP_GUNSONU_N	19:00:00+
6	VIOP_YAYIN	23:30:00+

12.2   Half Days

	EQUITY DERIVATIVES MARKET (TSS=DRV_TS_EQ_HD)	
	Session State	**Time**
1	VIOP_SEANS_ONCESI	07:00:00
2	VIOP_SUREKLI_MZYD	09:30:00
3	VIOP_SEANS_SONU	12:40:00
4	VIOP_UF_ILANI	13:25:00+
5	VIOP_GUNSONU_N	13:30:00+
6	VIOP_YAYIN	23:30:00+

	REMAINING DERIVATIVES MARKETS (TSS=DRV_TS_OT_HD)	
	Session State	**Time**
1	VIOP_SEANS_ONCESI	07:00:00
2	VIOP_SUREKLI_MZYD	09:30:00
3	VIOP_SEANS_SONU	12:45:00
4	VIOP_UF_ILANI	13:25:00+
5	VIOP_GUNSONU_N	13:30:00+
6	VIOP_YAYIN	23:30:00+

- **VIOP_SEANS_ONCESI:** PRE TRADE SESSION
- **VIOP_SUREKLI_MZYD:** CONTINUOUS AUCTION
- **VIOP_SEANS_SONU:** END OF SESSION
- **VIOP_UF_ILANI:** SETTLEMENT PRICE ANNOUNCEMENT

- **VIOP_GUNSONU_N:** END OF DAY
- **VIOP_YAYIN:** BROADCAST

Notice: It should be considered that aforementioned session state sequences and exact times in trading sessions might be updated by Exchange if it seen necessary

ANNEX – 9

PRICE MARGINS AND PRICE LIMITS

13 ANNEX 9: PRICE MARGINS AND PRICE LIMITS

Instrument Class	Base Price	Limit	Limit Value	Limit Example
Equity Options Contracts	0,01-0,99	Constant	+3,00	Base Price: 0,50 Lower Limit: - Upper Limit: 3,50
	1,00-14,99	Percentage (%)	+%300	Base Price: 2,50 Lower Limit: - Upper Limit: 10,00
	15,00 and above	Constant	+100,00	Base Price: 60,00 Lower Limit: - Upper Limit: 160,00
BIST30 Index and Mini BIST30 Index Options Contracts	0,01-14,99	Constant	+20,00	Base Price: 5,00 Lower Limit: - Upper Limit: 25,00
	15,00-99,99	Percentage (%)	+%200	Base Price: 50,00 Lower Limit: - Upper Limit: 150,00
	100,00 and above	Constant	+50,00	Base Price: 150,00 Lower Limit: - Upper Limit: 200,00
USDTRY Options Contracts	0,1-49,9	Constant	+50,00	Base Price: 5,00 Lower Limit: - Upper Limit: 55,00
	50,0-99,9	Percentage (%)	+%400	Base Price: 70,00 Lower Limit: - Upper Limit: 350,00
	100,0 and above	Constant	+500,00	Base Price: 150,00 Lower Limit: - Upper Limit: 650,00