

Readers should be aware that only the original Turkish text has legal force and that this English translation is strictly for reference. Borsa Istanbul cannot undertake any responsibility for its accuracy nor be held liable for any loss or damages arising from or related to its use.

Document	Type	Announcement
	No	2016 / 27
	Subject	Tests Which Will Be Performed About The Planned Changes and New Market Applications on BISTECH System and Go Live Dates
	Approval Date	/03/2016
	Prepared by	Equity Market Department And Equity Market Application Development Department
	Distribution	Members and Data Vendors

To Whom It May Concern,

As it is well known, current BISTECH system has gone live on 30/11/2015 and this system release allowed some changes in equity market rules and operations. To ensure smooth transition of our members and data vendors and all market participants and minimize risks of transformation period, some functionalities are postponed to be released after BISTECH system transition and it is announced that these applications will go-live in time with scheduled dates.

Improvements and developments are continued on BISTECH system and market applications. These on-going and planned go-live functionalities will be classified in two groups as changes in current applications and new applications. Changes in current applications are planned go-live on 30/05/2016

Although changes in the first group are very related with technical improvements on BIST side, members and data vendors are expected to be informed and carry out tests accordingly to prepare their systems.

Improvements on Trading Workstations (TWs)

- When trying to send pre-prepared inactive orders from TW at once just when the session starts, a user will be able send all selected inactive orders to system. (See appendix-1 A)
- New changes to let the users to use TWs more efficiently will be implemented. Consequently buy and sell buttons on order entry window will be colored differently and only one active order entry window (either buy or sell) will be opened with short cut keys. Pre-prepared orders can be sent from keyboard short cut key. To ease order entry and tracking operations from TW, on price information window whole row will be highlighted for the selected instrument. (See Appendix-1 B)

Changes and Improvements on FIX channels

- Five new tags are added to "Security Definition" message that is sent to reference data user. (See Appendix 1-C)
- New Filtering Options in Drop-Copy (DC) Service: It will be possible to receive related filtered drop copy messages by only selected users. Currently all messages belong to related participant are being received by drop copy users. (See Appendix 1-D)

Readers should be aware that only the original Turkish text has legal force and that this English translation is strictly for reference. Borsa Istanbul cannot undertake any responsibility for its accuracy nor be held liable for any loss or damages arising from or related to its use.

- In every case a “Quote Status Report” (QSR) will be created giving the original quantity at quote entry. “Quote Status Report” will be resent giving the remaining quantity after partial or full fill. (For QSR Example See Appendix-1 E)

TAKASBANK functions to be enhanced

- Partial, together with or settlement defined RTGS (bilateral) instructions will be cancelled one sided by our members. By means of related enhancement, our members will be able to cancel their RTGS (bilateral) instructions both partial and link defined (together with and settlement defined) without any counterparty approval.
- Related defined linkage types on the settlement defined or together with RTGS (bilateral) will be automatically removed by the settlement system at the end of the day.
- Partial not allowed RTGS (bilateral) instructions will be switched to partial allowed mode without any cancellation by our members

New applications that are in second group and planned go-live dates are given in below table. Further details about these new applications will be provided in the coming announcement before go-live. These applications are also expected to be tested by members before 30/05/2016.

New Application	Planned Go-live Date
Pre-Trade Risk Management (PTRM) Application	27/06/2016
OUCH Protocol	27/06/2016
Reserve / Iceberg Orders	27/06/2016
Mid-Point Orders	27/06/2016
Price Tick Under One Kurush	27/06/2016
New Filtering Options in Drop-Copy (DC) Service	27/06/2016
Trade at VWAP (Trade at Reference) Orders	30/09/2016
Increasing Number of Trade Code Characters (more than 5)	27/06/2016

Summarized info about second group changes is given below.

- Pre-trade Risk Management Application: Using PTRM application will be obligated for broadly authorized members that send orders using algorithms, from their own servers or customers’ servers which are located at the co-location premises of BIST. For members other than broadly authorized members will be optional. Fee schedule for the usage of PTRM application will be announced in the following days. This application allows to limit tradable instruments, volume or value, order and trade basis. (See Appendix 1-F)
- OUCH Protocol: This is a new order entry protocol introduced by BISTECH system, allowing for a faster order entry compared to other order entry channels.
- Reserve / Iceberg Orders: The order is comprised of two parts, visible and hidden. When the visible part is executed fully, a portion from the hidden part which is as big as the previously traded visible part comes out and gets in line in the order book like a new order.

Readers should be aware that only the original Turkish text has legal force and that this English translation is strictly for reference. Borsa Istanbul cannot undertake any responsibility for its accuracy nor be held liable for any loss or damages arising from or related to its use.

- Mid-Point Orders: This new order type is developed for larger scaled orders when compared with that of the normal order book to trade among themselves having a fair price, with lower costs without creating a market impact. Orders are priced at a price that is calculated based on the arithmetic average of the best bid and offer that is current in the normal order book and they are traded in a separate and dark order book.
- Price Tick Under One Kurush: The current smallest price tick applied as one kurush (0.01 TRL) is planned to be applied as half a kurush (0.005 TRL) for the instruments that trade below 1 TRY. (See Appendix 1-I)
- Trade at VWAP (Trade at Reference) Orders: VWAP (Volume Weighted Average Price) order is a type of order that allows market participants to trade a stock during the day at VWAP or "VWAP +/- the lowest or the highest price tick level, specified by the Stock Exchange" that will emerge at the end of the day. Such orders are called Trade At Reference in BISTECH System as they can be configured to trade at the closing price instead of VWAP (only VWAP will be used for reference). Since these orders are collected in a separate dark order book and trade prices will be determined at the end of the day, total trading volume and value of VWAP trades will not be broadcasted from TWs and data vendors during the day. (See Appendix 1-J)
- Increasing Number of Trade Code (Ticker Symbol) Characters: Trade codes are currently limited at 5 characters. Number of characters might be more than 5, especially for warrants. (See Appendix 1-K)

Applications in the second group are explained in detail in "Equity Market Implementing Procedures and Principles" and "Application Changes and New Applications to be engaged related to Operation of Equity Market" document published at <http://www.borsaistanbul.com/en/bistechsupport/technical-documents> link.

Questions can be sent to the address bistechsupport_autoticket@borsaistanbul.com by e-mail.

Tests regarding changes and new applications will be held on a different environment than current member test environment with node 10.57.3.8 and start on 15/04/2016. Connection details required for testing is going to be provided at <http://www.borsaistanbul.com/en/bistechsupport/news-releases> link. Time schedule is also going to be provided at the same link for data vendors' test environment (10.57.3.6, 185.76.203.242/243). Collective tests will be carried out on 07/05/2016 with the participation of all members and data vendors. Detailed information about collective tests will be announced later.

Test scenarios and technical information about clearing and settlement functions will also be announced by Takasbank.

For your information and necessary actions

Sincerely,

Adnan METİN
Executive Vice President

Aydın SEYMAN
Executive Vice President

Readers should be aware that only the original Turkish text has legal force and that this English translation is strictly for reference. Borsa Istanbul cannot undertake any responsibility for its accuracy nor be held liable for any loss or damages arising from or related to its use.

Attachment-1:

Test of New Applications and Changes on BISTECH Trading Platform That Are Going to be Released on Production Regarding Equity Market – Technical Details Document

March 2016

Please forward the announcement to company executives and IT authorities.

(Announcement can be downloaded at following link: <http://borsaistanbul.com/en/nasdaqsupport/news-releases>)

Esteemed Member,

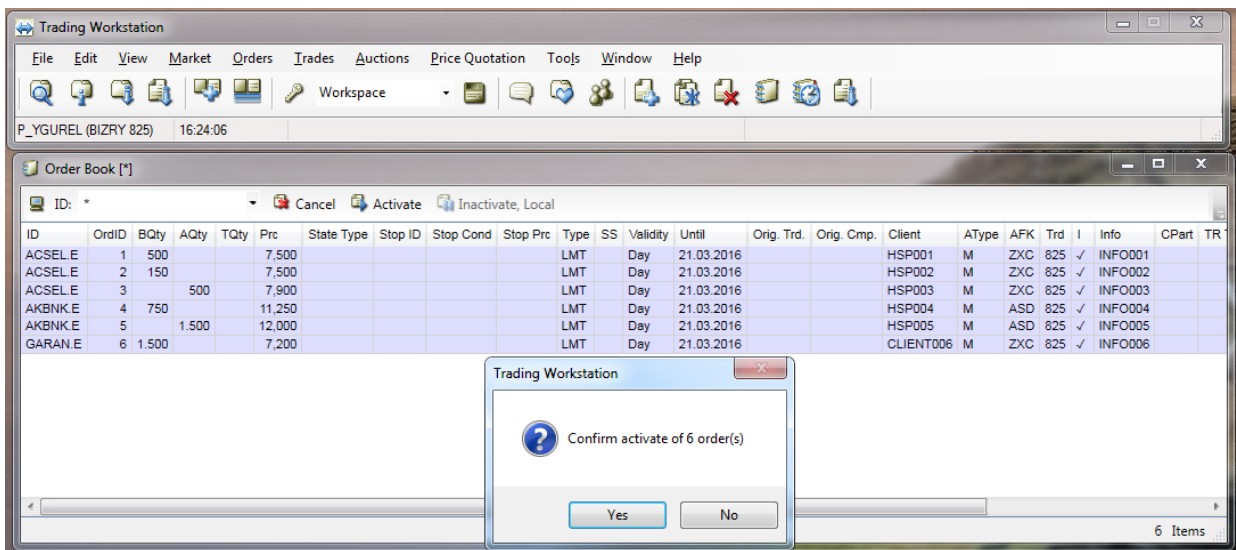
Technical details regarding the changes and and new applications on BISTECH system that are going to be released on May 30th, 2016 are mentioned below in this document.

Announcements of on going and planned releases of changes will be available at following webpage which should be followed regularly (<http://www.borsaistanbul.com/en/bistechsupport/news-releases>).

This document should be shared with Trader Workstation (TW) users since Trader Workstation is affected by changes to be released.

A. Sending Orders via Trader Workstation that are Saved Prior to the Opening Auction

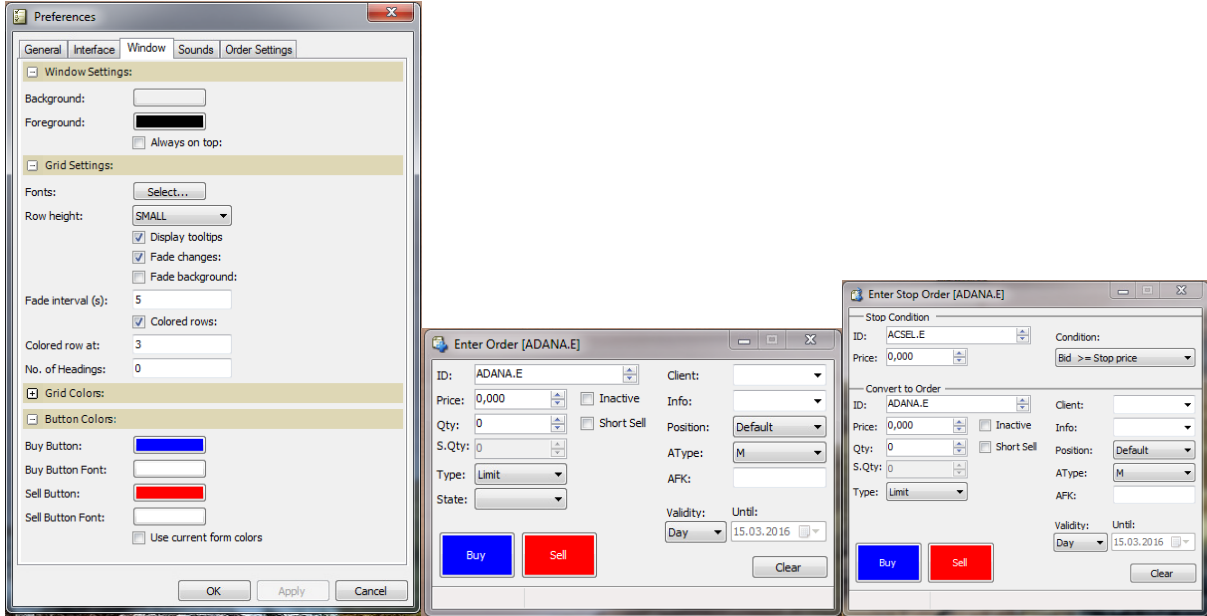
- In case of saved multiple orders on Trader Workstation prior to the start of Opening Auction Order Collection (pre-open period), it will be possible to send all orders together when the system is open to order transmission.
- Following is a screenshot for the regarding development.



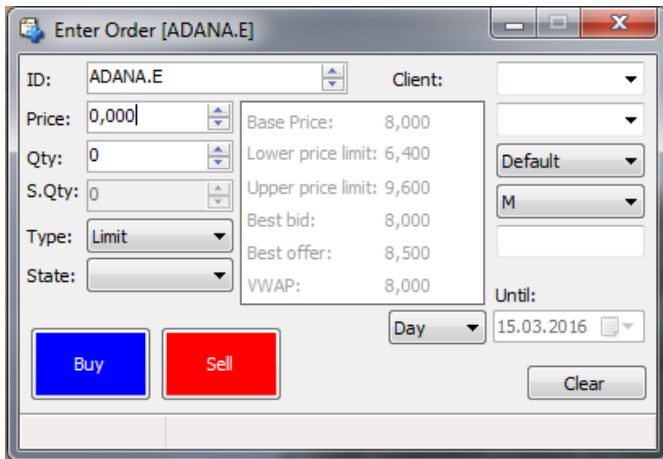
Readers should be aware that only the original Turkish text has legal force and that this English translation is strictly for reference. Borsa Istanbul cannot undertake any responsibility for its accuracy nor be held liable for any loss or damages arising from or related to its use.

B. Improvement of Usability of Trader Workstation

- Buy and Sell buttons in the Enter Order window of Trader Workstation can be customized with different colors.

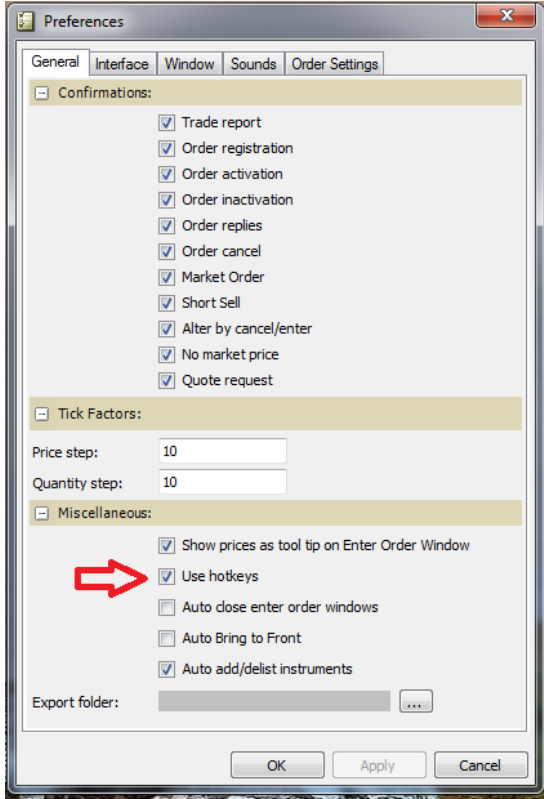


- Orderentry type of windows (with only BUY or only SELL buttons enabled) can be accessed by hotkeys ("Enter Order" window that is opened by F3/F9 hotkeys)



Readers should be aware that only the original Turkish text has legal force and that this English translation is strictly for reference. Borsa Istanbul cannot undertake any responsibility for its accuracy nor be held liable for any loss or damages arising from or related to its use.

- An order entered in the “Enter Order” window of Trader Workstation can be sent by keyboard hotkeys (Alt+A – Buy / Alt+S - Sell), without need of mouse usage.



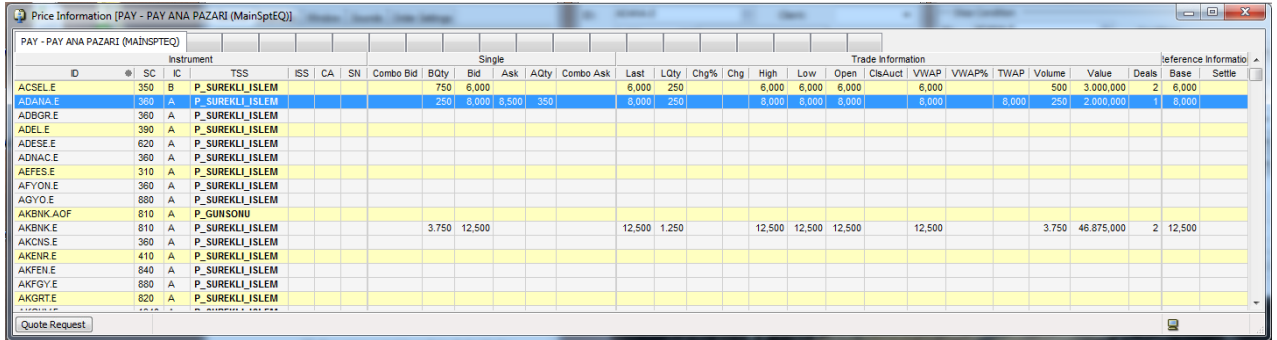
Please find the actions of keyboard shortcuts below:

- F1 - Help
- F2 – Enter Order (Buy and Sell buttons enabled)
- F3 – Enter Buy Order (Sell button disabled)
- F4 – Enter Stop Order
- F5 – Enter Trade Report
- F6 – Price Quotation
- F7 – Order Book
- F8 – Trade Information
- F9 – Enter Sell Order (Buy button disabled)
- F10 – Order Depth
- F11 – Price Depth
- INSERT – Enter Tailor Made Combination

(Keyboard shortcuts will be enabled with respect to the user authorization and market features.)

Readers should be aware that only the original Turkish text has legal force and that this English translation is strictly for reference. Borsa Istanbul cannot undertake any responsibility for its accuracy nor be held liable for any loss or damages arising from or related to its use.

- Whole row will be highlighted for a selected instrument in Price Information window.



Instrument		Single										Trade Information										Reference Information							
ID	SC	IC	TSS	ISS	CA	SN	Combo Bid	BQty	Bid	Ask	AQty	Combo Ask	Last	LQty	Chg%	Chg	High	Low	Open	CisAuct	VWAP	VWAP%	TWAP	Volume	Value	Deals	Base	Settle	
ADANA.E	360	A	P_SUREKLI_JSLEM					250	6,000	6,500	350		6,000	250		6,000	6,000	6,000	6,000		6,000		6,000	250	2,000,000	2	6,000		
ADBGR.E	360	A	P_SUREKLI_JSLEM																										
ADELE.E	390	A	P_SUREKLI_JSLEM																										
ADESE.E	620	A	P_SUREKLI_JSLEM																										
ADNAC.E	360	A	P_SUREKLI_JSLEM																										
AEFES.E	310	A	P_SUREKLI_JSLEM																										
AFYON.E	360	A	P_SUREKLI_JSLEM																										
AGYO.E	880	A	P_SUREKLI_JSLEM																										
AKBNK.AOF	810	A	P_GUISONU																										
AKBNK.E	810	A	P_SUREKLI_JSLEM					3,750	12,500				12,500	1,250		12,500	12,500	12,500	12,500		12,500			3,750	46,875,000	2	12,500		
AKCNS.E	360	A	P_SUREKLI_JSLEM																										
AKENR.E	410	A	P_SUREKLI_JSLEM																										
AKFEN.E	840	A	P_SUREKLI_JSLEM																										
AKFGY.E	880	A	P_SUREKLI_JSLEM																										
AKGRTE	820	A	P_SUREKLI_JSLEM																										

C. New tags for “Security Definition” message of FIX Reference Data Session

- Five new tags are added to the “Security Definition” message sent through FIX Reference Data session. Fields 21029 and 21030 are going to be sent only for warrant instruments, not for equities.

21026 Derivative Level

21027 Number Of Shares Issued

21028 Physical Delivery

21029 Multiplier (Optional for Warrants/Certificates)

21030 Reference (Optional for Warrants/Certificates)

- Sample Security Definition message for Equities:

```
> 8=FIXT.1.1|9=000614|35=d|49=BI|56=BIACP|34=446|57=FR031|52=20160315-
09:12:31.828|21001=A |21005=N|21004=SI|21007=P_STANDART |21008=2|325=N|21027=190000000.00000
00|21026=0|21028=N|60=20160315-
09:12:31.828|1180=R|1181=444|1350=443|55=VESBE.E|48=79156|22=M|167=5|228=1.0000000|202=0|231=1.0
000000|15=TRY|577=6|1310=1|1301=MSPOT|1300=Z |1205=4|1206=0.0100000|1207=19.9990000|1208=0.01
00000|1206=20.0000000|1207=49.9990000|1208=0.0200000|1206=50.0000000|1207=99.9990000|1208=0.05000
00|1206=100.0000000|1207=999999.9990000|1208=0.1000000|1234=1|1093=2|1231=1.0000000|1140=1000000
0.0000000|1396=PAY-YILDIZ PAZAR |10=162|
```

- Sample Security Definition message for Warrants:

```
> 8=FIXT.1.1|9=000530|35=d|49=BI|56=BIACP|34=497|57=FR031|52=20160315
09:12:31.839|21005=N|21004=PY|21007=P_IKI_SI |21008=1|325=N|21027=2500000.0000000|21026=1|21030
=NAV |21029=0,001 |21028=N|60=20160315-
09:12:31.839|1180=R|1181=495|1350=494|55=DXD2E.V|48=335001|22=M|167=14|200=201607|541=20160715
|228=1.0000000|202=10750.0000000|231=1.0000000|201=1|15=TRY|577=6|1310=1|1301=MSPOT|1300=K |12
05=1|1206=0.0100000|1207=999999.9990000|1208=0.0100000|1234=1|1093=2|1231=1.0000000|1140=1000000
0.0000000|1396=PAY-KOLLEKTIF&YAPILANDIRILMIS UR. PAZARI|10=112|
```

Readers should be aware that only the original Turkish text has legal force and that this English translation is strictly for reference. Borsa Istanbul cannot undertake any responsibility for its accuracy nor be held liable for any loss or damages arising from or related to its use.

D. Filter Option for Drop Copy Sessions

- By filtering feature of Drop Copy sessions, members will be able to filter received messages through their Drop Copy sessions by user. It will be possible to filter in specific users and filter out specific ones among all users of a member. It is also possible not to populate the filter by user and continue with the current configuration where messages of all users are received through the Drop Copy session.
- Filtering by user will enable members to isolate the messages of Co-Location users from rest of the users. It is also possible to separate the Co-Location users who perform High Frequency Trading and the regular FIX users.
- With the go-live of PreTrade Risk Management application, it will be possible for highly authorized sponsoring participants to receive the messages of their less authorized sponsored participants and filter among the users of sponsored participants.

E. Quote Status Report Message

- In case a Quotation Order is partially or fully traded as soon as being entered, a Quote Status Report message will be sent with the quantity information of original quotation order. It will be followed by another Quote Status Report message with the remaining quantity information after the trade(s).

Sample Quote Status Report:

```
> 8=FIXT.1.1|9=000221|35=AI|49=BI|56=BIACP|34=5|52=20160314  
08:18:37.794|117=5CB188C100002169|537=1|453=2|448=BIACP|447=D|452=1|448=FX031|447=D|452=12|55=  
ADEL.E|48=70676|22=M|1=123 |528=A|797=Y|132=10.2000000|134=250.0000000|297=0|10=227|
```

F. PreTrade Risk Management Application (PTRM)

- With the introduction of PTRM, it will be mandatory to use PTRM for fully authorized members who have placed their own electronic systems or their sponsored participant's system in the Co-Location area, and enter orders that are created electronically by algorithms running on these systems directly to the market. Price of PTRM application will be announced.
- PTRM will be optional for rest of the members.
- PTRM will enable fully authorized members to apply certain limits on their users with given parameters either by grouping them or one by one, and eliminate the risk that can be caused by their users.

G. OUCH Order Entry Protocol

- Document of Certification program for OUCH protocol is published at following webpage under "OUCH protocol Certification Program":

<http://www.borsaistanbul.com/en/bistechsupport/technical-documents>

Readers should be aware that only the original Turkish text has legal force and that this English translation is strictly for reference. Borsa Istanbul cannot undertake any responsibility for its accuracy nor be held liable for any loss or damages arising from or related to its use.

- Announcement (04/03/2016 dated and 2016/19 numbered) regarding the go-live and certification process of OUCH protocol is available at following link:

<http://www.borsaistanbul.com/en/bistechsupport/general-letter>

H. Mid-Point Orders

- Mid-Point orders are subject to Maximum and Minimum Value control when entered and modified.
- Mid-Point orders are continuously traded and no information is disseminated regarding Mid-Point orders.
- Mid-Point orders are only entered for sessions.
- Mid-Point orders are only matched with Mid-Point orders (separate order book)
- Mid-Point orders are classified as Mid-Point Market (MPM) and Mid-Point Limit (MPL). Both MPM and MPL orders are executed at the mid-point price of the best bid and offer in the normal order book. The difference of MPL orders from MPM orders is the limit price level that is specified. MPL orders are executed when the price specified is equal to or better than the Mid-Point Price. MPL orders are not executed when the Mid-Point price is worse than the specified limit price. It stays in the order book.

Detailed information about Mid-Point orders can be found in the document “Equity Market New Operation Rules”.

I. Price Tick lower than Kurush

- Price Levels are displayed with 3 decimals with the current configuration while third decimal has not been given other than zero value. After the release, it will be possible to display the price levels with 3 decimals (10bps), below 1 kurush. With the introduction of price ticks under one 1 kurush, sample price level of 10.050 can be displayed and traded at price level 10.055.

J. Volume Weighted Average Price Orders (VWAP – AOF orders)

- VWAP orders are traded in a separate dark order book with continuous trading method (e.g. GARAN.AOF).
- VWAP order is entered in the system only when a trade occurs and price emerges in the relevant stock’s main order book (GARAN.E for GARAN.AOF).
- VWAP orders are sent to the System by stating the variation from the VWAP with price ticks - the lowest and highest price ticks are to be specified by the Stock Exchange (For Example VWAP +1 tick) or without stating any price. End-of-day trade price is calculated by adding price ticks to the VWAP that emerged in the stock’s main order book.

Readers should be aware that only the original Turkish text has legal force and that this English translation is strictly for reference. Borsa Istanbul cannot undertake any responsibility for its accuracy nor be held liable for any loss or damages arising from or related to its use.

- The price formation in VWAP trades are not subject to price tick rules applicable to the normal order book and VWAP trades. No rounding up is made based on the current price tick of the stock.
- Orders can only be entered for one session.
- VWAP orders can only be matched with each other.
- The minimum quantity rule is applied to the orders.
- Total trading volume and value of VWAP trades are not broadcasted during the day.

Detailed information about VWAP orders can be found in the document “Equity Market New Operation Rules”.

K. Maximum Number of Characters for Instrument Name

- Instrument name without suffix code consists of 5 characters for current application (AKDAA.V). Instrument names may consist of more than 5 characters after the release. Such as:
 - AKDAA01.V
 - AKIPPZZ.V
 - AKYKIAA01.V
 - AKYKDAA01.TV
 - TESTPAY.E
 - APPLDSIAA01.V

Although it is not planned to use it to the maximum capacity in the Equity Market, BISTECH Platform allows up to 32 characters in the Instrument Name field. Therefore it will be useful to build a structure on client side that should support up to 32 characters in case it is needed.