



BISTECH DATA DISSEMINATION SYSTEM

Market and Index Data Flow, Important Issues and
Content of Data Packages

Copyright © 2015 Borsa İstanbul A.Ş.
All rights reserved

Confidential Information. This document cannot be copied in any circumstances, and cannot be shared with third parties, who did not sign the “Borsa İstanbul Data Dissemination Nondisclosure Agreement”, partially or in full.

BORSA İSTANBUL A.Ş.
TUNCAY ARTUN CAD. EMİRGAN 34467 İSTANBUL
TEL : (212) 298 21 00
FAX : (212) 298 25 00

Revision History

Version	Date	Summary of Revisions
1.0	20.11.2015	First version Equity Market + ICSII (Equity, Risk Control, Short/Leveraged)
2.0	13.01.2017	Second version Equity Market + Derivatives Market + ICSII (Equity, Risk Control, Short/Leveraged, Divisor Sharing, Volatility)

Table of Contents

1.	BISTECH Equity market data flow	3
2.	BISTECH Derivatives market data flow	9
3.	BISTECH Index data flow	12
4.	Accessing market data logs of previous days	14
5.	Redundancy configuration / Things to do during failover	15
6.	Important issues as processing “Orderbook” messages	16
7.	Important issues as processing “StateChange” messages	17
7.1.	General Rules	17
7.2.	Market/Orderbook Level Messages	17
8.	Important issues as processing “MarketMakerQuote” messages	20
9.	Important explanations for other messages	21
10.	Content of data packages	22
10.1.	Equity Market Data Packages	22
10.2.	Derivatives Market Data Packages	24
10.3.	Index Products Data Packages	26
10.4.	Reference Data Packages	27
10.5.	Data Analytics Packages	28

1. BISTECH EQUITY MARKET DATA FLOW

During the standard operations of BISTECH, following market data flow is expected. Nevertheless, there can be differences in the flow depending on the market model of the instrument.

In addition to the flow under mentioned, in case of the single session state changes of instruments, there can be changes in the flow of the related instrument, and different messages can be disseminated.

It is expected that data vendors do not process TIP messages/fields which are not in compliance with BISTECH TIP format. In case of receiving such an information, data vendors should continue to process afterwards incoming information that is consistent with the format.

<p>Start of the Day (06:00)</p>	<p>BISTECH Data Dissemination System starts to disseminate the business date and basic data (not changing throughout the day) for each instrument that would be traded on the same day. Basic data contains descriptive information related to instruments, ISIN, type of security, previous day's summary, and if available, linked sector/list/index information.</p> <p>Dynamic usage of "Id-Symbol" match in BDt, BDm (and etc) messages by data vendors would prevent possible problems in case of "Id-Symbol" changes. It is recommended to use dynamic "Id-Symbol" matching, instead of static "Id-Symbol" matching.</p> <p>Each data vendor should keep the sequence number of each message coming out from the system in their own structure. In later access requests, if it is requested to continue from the last situation just before the disconnection, this sequence number will be used as reconnecting.</p> <p>Here are the message types disseminated within this scope:</p> <table border="1" data-bbox="427 1167 1347 2013"> <thead> <tr> <th><i>Message</i></th> <th><i>Tag</i></th> <th><i>Description</i></th> </tr> </thead> <tbody> <tr> <td>BasicDataBusinessDate</td> <td>BDBu</td> <td>Defines the business date.</td> </tr> <tr> <td>BasicDataSource</td> <td>BDSr</td> <td>Defines the source system.</td> </tr> <tr> <td>BasicDataExchange</td> <td>BDx</td> <td>Defines the exchange.</td> </tr> <tr> <td>BasicDataMarket</td> <td>BDm</td> <td>Defines the market.</td> </tr> <tr> <td>BasicDataClearingVenue</td> <td>BDCv</td> <td>Defines the clearing venue.</td> </tr> <tr> <td>BasicDataParticipant</td> <td>BDp</td> <td>Defines the participant.</td> </tr> <tr> <td>BasicDataNonTradingDays</td> <td>BDTd</td> <td>Defines the non and half trading days.</td> </tr> <tr> <td>BasicDataTableEntry</td> <td>BDTe</td> <td>Defines the table entry.</td> </tr> <tr> <td>BasicDataIssuer</td> <td>BDIs</td> <td>Defines the issuer.</td> </tr> <tr> <td>BasicDataTickSizeTable</td> <td>BDTs</td> <td>Defines the tick size table.</td> </tr> <tr> <td>BasicDataTickSizeEntry</td> <td>BDTz</td> <td>Defines the tick size entry.</td> </tr> <tr> <td>BasicDataTradable</td> <td>BDt</td> <td>Defines the tradable.</td> </tr> <tr> <td>BasicDataTradableSupplementary</td> <td>BDTr</td> <td>Defines the ISIN of the tradable</td> </tr> <tr> <td>BasicDataTradingScheme</td> <td>BDTm</td> <td>Defines the trading scheme.</td> </tr> <tr> <td>BasicDataShare</td> <td>BDSH</td> <td>Defines the basic data of the share.</td> </tr> <tr> <td>BasicDataDerivative</td> <td>BDDe</td> <td>Defines the basic data of the derivative.</td> </tr> <tr> <td>BasicDataFund</td> <td>BDEt</td> <td>Defines the basic data of the fund.</td> </tr> <tr> <td>BasicDataRight</td> <td>BDRi</td> <td>Defines the basic data of the right.</td> </tr> </tbody> </table>	<i>Message</i>	<i>Tag</i>	<i>Description</i>	BasicDataBusinessDate	BDBu	Defines the business date.	BasicDataSource	BDSr	Defines the source system.	BasicDataExchange	BDx	Defines the exchange.	BasicDataMarket	BDm	Defines the market.	BasicDataClearingVenue	BDCv	Defines the clearing venue.	BasicDataParticipant	BDp	Defines the participant.	BasicDataNonTradingDays	BDTd	Defines the non and half trading days.	BasicDataTableEntry	BDTe	Defines the table entry.	BasicDataIssuer	BDIs	Defines the issuer.	BasicDataTickSizeTable	BDTs	Defines the tick size table.	BasicDataTickSizeEntry	BDTz	Defines the tick size entry.	BasicDataTradable	BDt	Defines the tradable.	BasicDataTradableSupplementary	BDTr	Defines the ISIN of the tradable	BasicDataTradingScheme	BDTm	Defines the trading scheme.	BasicDataShare	BDSH	Defines the basic data of the share.	BasicDataDerivative	BDDe	Defines the basic data of the derivative.	BasicDataFund	BDEt	Defines the basic data of the fund.	BasicDataRight	BDRi	Defines the basic data of the right.
<i>Message</i>	<i>Tag</i>	<i>Description</i>																																																								
BasicDataBusinessDate	BDBu	Defines the business date.																																																								
BasicDataSource	BDSr	Defines the source system.																																																								
BasicDataExchange	BDx	Defines the exchange.																																																								
BasicDataMarket	BDm	Defines the market.																																																								
BasicDataClearingVenue	BDCv	Defines the clearing venue.																																																								
BasicDataParticipant	BDp	Defines the participant.																																																								
BasicDataNonTradingDays	BDTd	Defines the non and half trading days.																																																								
BasicDataTableEntry	BDTe	Defines the table entry.																																																								
BasicDataIssuer	BDIs	Defines the issuer.																																																								
BasicDataTickSizeTable	BDTs	Defines the tick size table.																																																								
BasicDataTickSizeEntry	BDTz	Defines the tick size entry.																																																								
BasicDataTradable	BDt	Defines the tradable.																																																								
BasicDataTradableSupplementary	BDTr	Defines the ISIN of the tradable																																																								
BasicDataTradingScheme	BDTm	Defines the trading scheme.																																																								
BasicDataShare	BDSH	Defines the basic data of the share.																																																								
BasicDataDerivative	BDDe	Defines the basic data of the derivative.																																																								
BasicDataFund	BDEt	Defines the basic data of the fund.																																																								
BasicDataRight	BDRi	Defines the basic data of the right.																																																								

	BasicDataList	BDLi	Defines the basic data of the list.																					
	BasicDataSector	BDs	Defines the sectoral hierarchy.																					
	BasicDataListMember	BDLm	Defines the list of the tradable.																					
	BasicDataSectorMember	BDSm	Defines the sector of the tradable.																					
	EndOfBasicData	EOBd	End of BasicData messages.																					
	OrderbookSummary	m	Last trading day's summary data of the tradable.																					
	Statechange	s	26-NonTradable Period																					
	OrderbookReferencePrice	r	Base price valid for that session is disseminated.																					
	MarketMakerQuote1	q	Flush (clearance of quote information)																					
	MarketMakerQuote2	y	Flush (clearance of quote information)																					
	Orderbook1	o	Flush (clearance of order information)																					
	Orderbook2	p	Flush (clearance of order information)																					
	Orderbook3	z	Flush (clearance of order information)																					
	Tradestatistics1	u	Flush (clearance of statistics)																					
	Tradestatistics2	v	Flush (clearance of statistics)																					
	Tradestatistics3	w	Flush (clearance of statistics)																					
	Statechange	s	27-Dissemination of Price Limits																					
	Orderbook3	z	"Tot Vol All Bid/Ask" values will be 0 for Equity market.																					
	MBPOrderSnapShot	k	Flush (clearance of order information)																					
	OrderbookReferencePrice	r	Upper lower price limits information valid for the following session is disseminated.																					
	News	n	News and system messages																					
	CorporateAction	TRh	This message is sent when there isa corporate action.																					
	Statechange	s	6-Break																					
Opening Session	<p>At the opening session, related state message is sent and the orders are started to be collected. Equilibrium price and equilibrium volume based on collected orders are disseminated. Depending on the authorized data package, remaining quantity at equilibrium bid/ask price level is also disseminated.</p> <p>Following messages are sent during this session:</p> <table border="1"> <thead> <tr> <th><i>Message</i></th> <th><i>Tag</i></th> <th><i>Description</i></th> </tr> </thead> <tbody> <tr> <td>Statechange</td> <td>s</td> <td>4-Opening Session</td> </tr> <tr> <td>CallInformation1</td> <td>c</td> <td>Equilibrium price and equilibrium volume based on collected orders are disseminated.</td> </tr> <tr> <td>CallInformation2</td> <td>Cl</td> <td>Remaining quantity at equilibrium bid/ask price level is disseminated.</td> </tr> <tr> <td>Orderbook1</td> <td>o</td> <td>As moving from opening session to uncrossing, the latest situation of order book at that moment is disseminated.</td> </tr> <tr> <td>Orderbook2</td> <td>P</td> <td>As moving from opening session to uncrossing, the latest situation of order book at that moment is disseminated.</td> </tr> <tr> <td>Orderbook3</td> <td>z</td> <td>As moving from opening session to uncrossing, the latest situation of order book is disseminated.</td> </tr> </tbody> </table>			<i>Message</i>	<i>Tag</i>	<i>Description</i>	Statechange	s	4-Opening Session	CallInformation1	c	Equilibrium price and equilibrium volume based on collected orders are disseminated.	CallInformation2	Cl	Remaining quantity at equilibrium bid/ask price level is disseminated.	Orderbook1	o	As moving from opening session to uncrossing, the latest situation of order book at that moment is disseminated.	Orderbook2	P	As moving from opening session to uncrossing, the latest situation of order book at that moment is disseminated.	Orderbook3	z	As moving from opening session to uncrossing, the latest situation of order book is disseminated.
<i>Message</i>	<i>Tag</i>	<i>Description</i>																						
Statechange	s	4-Opening Session																						
CallInformation1	c	Equilibrium price and equilibrium volume based on collected orders are disseminated.																						
CallInformation2	Cl	Remaining quantity at equilibrium bid/ask price level is disseminated.																						
Orderbook1	o	As moving from opening session to uncrossing, the latest situation of order book at that moment is disseminated.																						
Orderbook2	P	As moving from opening session to uncrossing, the latest situation of order book at that moment is disseminated.																						
Orderbook3	z	As moving from opening session to uncrossing, the latest situation of order book is disseminated.																						

	MBPOrderSnapshot	k	As moving from opening session to uncrossing, best 10 levels at bid & ask (the level may change) at order book at that moment are disseminated.																																										
Uncrossing	<p>As moving from opening session to uncrossing, the trades executed at equilibrium price and statistics related to these trades are disseminated. The state changes to continuous trading following the dissemination of the latest situation of order book.</p> <p>Following messages are sent during this session:</p> <table border="1" data-bbox="432 613 1348 1576"> <thead> <tr> <th><i>Message</i></th> <th><i>Tag</i></th> <th><i>Description</i></th> </tr> </thead> <tbody> <tr> <td>Statechange</td> <td>s</td> <td>3-Uncrossing</td> </tr> <tr> <td>Trade1</td> <td>t</td> <td>The trades executed at equilibrium price during the opening session are disseminated. (Without Buyer&Seller Id's)</td> </tr> <tr> <td>Trade2</td> <td>d</td> <td>The trades executed at equilibrium price during the opening session are disseminated. (With Buyer&Seller Id's)</td> </tr> <tr> <td>Tradestatistics1</td> <td>u</td> <td>Statistics related to the executed trades are disseminated.</td> </tr> <tr> <td>Tradestatistics2</td> <td>v</td> <td>Statistics related to the executed trades are disseminated.</td> </tr> <tr> <td>Tradestatistics3</td> <td>w</td> <td>Statistics related to the executed trades are disseminated.</td> </tr> <tr> <td>CallInformation1</td> <td>c</td> <td>Equilibrium price and equilibrium volume based on the collected orders are reset.</td> </tr> <tr> <td>CallInformation2</td> <td>Cl</td> <td>Equilibrium price and equilibrium volume based on the collected orders together with the remaining quantity at equilibrium price level are reset.</td> </tr> <tr> <td>Orderbook1</td> <td>o</td> <td>The latest situation of order book at that moment is disseminated.</td> </tr> <tr> <td>Orderbook2</td> <td>p</td> <td>The latest situation of order book at that moment is disseminated.</td> </tr> <tr> <td>Orderbook3</td> <td>z</td> <td>The latest situation of order book at that moment is disseminated.</td> </tr> <tr> <td>MBPOrderSnapshot</td> <td>k</td> <td>Best 10 levels at bid & ask (the level may change) at order book are disseminated.</td> </tr> <tr> <td>TurnoverListUpdate</td> <td>l</td> <td>Turnover and tendency of lists calculated in every minute.</td> </tr> </tbody> </table>			<i>Message</i>	<i>Tag</i>	<i>Description</i>	Statechange	s	3-Uncrossing	Trade1	t	The trades executed at equilibrium price during the opening session are disseminated. (Without Buyer&Seller Id's)	Trade2	d	The trades executed at equilibrium price during the opening session are disseminated. (With Buyer&Seller Id's)	Tradestatistics1	u	Statistics related to the executed trades are disseminated.	Tradestatistics2	v	Statistics related to the executed trades are disseminated.	Tradestatistics3	w	Statistics related to the executed trades are disseminated.	CallInformation1	c	Equilibrium price and equilibrium volume based on the collected orders are reset.	CallInformation2	Cl	Equilibrium price and equilibrium volume based on the collected orders together with the remaining quantity at equilibrium price level are reset.	Orderbook1	o	The latest situation of order book at that moment is disseminated.	Orderbook2	p	The latest situation of order book at that moment is disseminated.	Orderbook3	z	The latest situation of order book at that moment is disseminated.	MBPOrderSnapshot	k	Best 10 levels at bid & ask (the level may change) at order book are disseminated.	TurnoverListUpdate	l	Turnover and tendency of lists calculated in every minute.
<i>Message</i>	<i>Tag</i>	<i>Description</i>																																											
Statechange	s	3-Uncrossing																																											
Trade1	t	The trades executed at equilibrium price during the opening session are disseminated. (Without Buyer&Seller Id's)																																											
Trade2	d	The trades executed at equilibrium price during the opening session are disseminated. (With Buyer&Seller Id's)																																											
Tradestatistics1	u	Statistics related to the executed trades are disseminated.																																											
Tradestatistics2	v	Statistics related to the executed trades are disseminated.																																											
Tradestatistics3	w	Statistics related to the executed trades are disseminated.																																											
CallInformation1	c	Equilibrium price and equilibrium volume based on the collected orders are reset.																																											
CallInformation2	Cl	Equilibrium price and equilibrium volume based on the collected orders together with the remaining quantity at equilibrium price level are reset.																																											
Orderbook1	o	The latest situation of order book at that moment is disseminated.																																											
Orderbook2	p	The latest situation of order book at that moment is disseminated.																																											
Orderbook3	z	The latest situation of order book at that moment is disseminated.																																											
MBPOrderSnapshot	k	Best 10 levels at bid & ask (the level may change) at order book are disseminated.																																											
TurnoverListUpdate	l	Turnover and tendency of lists calculated in every minute.																																											
Continuous Trading	<p>As session moves to continuous trading, order book changes, executed trades and statistics related to these trades are disseminated. During the sessions, market data such as weighted average prices, last price and price depth at equity level is sent. For session changes, "StateChange" message is used. In case of an executed trade, TWAP is calculated in every 10 minutes during the day.</p> <p>Following messages are sent during this session:</p> <table border="1" data-bbox="432 1899 1348 1989"> <thead> <tr> <th><i>Message</i></th> <th><i>Tag</i></th> <th><i>Description</i></th> </tr> </thead> <tbody> <tr> <td>StateChange</td> <td>s</td> <td>2-Continuous</td> </tr> </tbody> </table>			<i>Message</i>	<i>Tag</i>	<i>Description</i>	StateChange	s	2-Continuous																																				
<i>Message</i>	<i>Tag</i>	<i>Description</i>																																											
StateChange	s	2-Continuous																																											

Orderbook1	o	Based on the orders sent to the trading system, changes in the best bid/ask price levels are disseminated.
Orderbook2	p	Based on the orders sent to the trading system, changes in the best bid/ask price levels and quantities are disseminated.
Orderbook3	z	Based on the orders sent to the trading system, changes in the order book (price and quantities) are disseminated.
MarketMakerQuote1	q	The price information of the quotation orders entered by the market maker(s) are disseminated.
MarketMakerQuote2	y	The price and volume information of the quotation orders entered by the market maker(s) are disseminated.
Trade1	t	The trades executed at equilibrium price during the opening session are disseminated. (Without Buyer&Seller Id's)
Trade2	d	The trades executed at equilibrium price during the opening session are disseminated. (With Buyer&Seller Id's)
Tradestatistics1	u	Statistics related to executed trades are disseminated.
Tradestatistics2	v	Statistics related to executed trades are disseminated.
Tradestatistics3	w	Statistics related to executed trades are disseminated.
MBPOrderSnapshot	k	Best 10 levels at bid & ask (the level may change) at order book are disseminated.
TurnoverListUpdate	l	Turnover and tendency of lists calculated in every minute.

Single Price Auction Session	<p>After the completion of continuous trading and for equities that are traded with single price auction, the information related to the single price auction session is disseminated. Order books are cleared and collection of orders starts.</p> <p>Following messages are sent during this session:</p> <table border="1" data-bbox="432 349 1347 1256"> <thead> <tr> <th><i>Message</i></th> <th><i>Tag</i></th> <th><i>Description</i></th> </tr> </thead> <tbody> <tr> <td>Statechange</td> <td>s</td> <td>8-Single Price Auction</td> </tr> <tr> <td>Orderbook1</td> <td>o</td> <td>Flush (clearance of order information)</td> </tr> <tr> <td>Orderbook2</td> <td>p</td> <td>Flush (clearance of order information)</td> </tr> <tr> <td>Orderbook3</td> <td>z</td> <td>Flush (clearance of order information)</td> </tr> <tr> <td>CallInformation1</td> <td>c</td> <td>Equilibrium price and equilibrium volume based on the collected orders are reset.</td> </tr> <tr> <td>CallInformation2</td> <td>Cl</td> <td>Equilibrium price and equilibrium volume based on the collected orders together with the remaining quantity at equilibrium price level are reset.</td> </tr> <tr> <td>Orderbook1</td> <td>o</td> <td>As moving from single price auction to uncrossing, the latest situation of order book at that moment is disseminated.</td> </tr> <tr> <td>Orderbook2</td> <td>p</td> <td>As moving from single price auction to uncrossing, the latest situation of order book at that moment is disseminated.</td> </tr> <tr> <td>Orderbook3</td> <td>z</td> <td>As moving from single price auction to uncrossing, the latest situation of order book at that moment is disseminated.</td> </tr> <tr> <td>MBPOrderSnapshot</td> <td>k</td> <td>As moving from single price auction to uncrossing, best 10 levels at bid & ask (the level may change) at order book at that moment are disseminated.</td> </tr> </tbody> </table>	<i>Message</i>	<i>Tag</i>	<i>Description</i>	Statechange	s	8-Single Price Auction	Orderbook1	o	Flush (clearance of order information)	Orderbook2	p	Flush (clearance of order information)	Orderbook3	z	Flush (clearance of order information)	CallInformation1	c	Equilibrium price and equilibrium volume based on the collected orders are reset.	CallInformation2	Cl	Equilibrium price and equilibrium volume based on the collected orders together with the remaining quantity at equilibrium price level are reset.	Orderbook1	o	As moving from single price auction to uncrossing, the latest situation of order book at that moment is disseminated.	Orderbook2	p	As moving from single price auction to uncrossing, the latest situation of order book at that moment is disseminated.	Orderbook3	z	As moving from single price auction to uncrossing, the latest situation of order book at that moment is disseminated.	MBPOrderSnapshot	k	As moving from single price auction to uncrossing, best 10 levels at bid & ask (the level may change) at order book at that moment are disseminated.
<i>Message</i>	<i>Tag</i>	<i>Description</i>																																
Statechange	s	8-Single Price Auction																																
Orderbook1	o	Flush (clearance of order information)																																
Orderbook2	p	Flush (clearance of order information)																																
Orderbook3	z	Flush (clearance of order information)																																
CallInformation1	c	Equilibrium price and equilibrium volume based on the collected orders are reset.																																
CallInformation2	Cl	Equilibrium price and equilibrium volume based on the collected orders together with the remaining quantity at equilibrium price level are reset.																																
Orderbook1	o	As moving from single price auction to uncrossing, the latest situation of order book at that moment is disseminated.																																
Orderbook2	p	As moving from single price auction to uncrossing, the latest situation of order book at that moment is disseminated.																																
Orderbook3	z	As moving from single price auction to uncrossing, the latest situation of order book at that moment is disseminated.																																
MBPOrderSnapshot	k	As moving from single price auction to uncrossing, best 10 levels at bid & ask (the level may change) at order book at that moment are disseminated.																																
Uncrossing	The above mentioned procedure and flow for uncrossing are followed.																																	
Continuous Trading	The above mentioned procedure and flow for continuous trading are followed.																																	
Closing Auction	As closing auction starts, due to the market rule, new base price and upper/lower price limits (OrderbookReferencePrice) that are determined based on the trades at last traded price are disseminated. Together with the related state change message, the above mentioned procedure and flow for auction (order collection) are followed.																																	
Uncrossing	The above mentioned procedure and flow for uncrossing are followed.																																	
Trades at closing price	During the last 2 minutes, trades at the closing price are occurred.																																	

<p>End of Day</p>	<p>After the completion of trades at the closing price, end of day process starts and with StateChange message related state “closed” is sent. Considering the executed trades all day for a single security, end of day summary, base prices and price limits valid for next day, and if a security is included in an index, for every index the calculated values based on the end of day values are disseminated.</p> <p>Following messages are sent during this session:</p> <table border="1" data-bbox="432 398 1347 1025"> <thead> <tr> <th><i>Messages</i></th> <th><i>Tag</i></th> <th><i>Description</i></th> </tr> </thead> <tbody> <tr> <td>Statechange</td> <td>s</td> <td>1-Closed</td> </tr> <tr> <td>Orderbook1</td> <td>o</td> <td>Flush (clearance of order information)</td> </tr> <tr> <td>Orderbook2</td> <td>p</td> <td>Flush (clearance of order information)</td> </tr> <tr> <td>Orderbook3</td> <td>z</td> <td>Flush (clearance of order information)</td> </tr> <tr> <td>OrderbookReferencePrice</td> <td>r</td> <td>Base price valid for that session is disseminated.</td> </tr> <tr> <td>OrderbookReferencePrice</td> <td>r</td> <td>Upper and lower price limits for that session is disseminated.</td> </tr> <tr> <td>OrderbookSummary</td> <td>m</td> <td>This message covers the summary data of an instrument based on the previous day’s trades.</td> </tr> </tbody> </table>	<i>Messages</i>	<i>Tag</i>	<i>Description</i>	Statechange	s	1-Closed	Orderbook1	o	Flush (clearance of order information)	Orderbook2	p	Flush (clearance of order information)	Orderbook3	z	Flush (clearance of order information)	OrderbookReferencePrice	r	Base price valid for that session is disseminated.	OrderbookReferencePrice	r	Upper and lower price limits for that session is disseminated.	OrderbookSummary	m	This message covers the summary data of an instrument based on the previous day’s trades.
<i>Messages</i>	<i>Tag</i>	<i>Description</i>																							
Statechange	s	1-Closed																							
Orderbook1	o	Flush (clearance of order information)																							
Orderbook2	p	Flush (clearance of order information)																							
Orderbook3	z	Flush (clearance of order information)																							
OrderbookReferencePrice	r	Base price valid for that session is disseminated.																							
OrderbookReferencePrice	r	Upper and lower price limits for that session is disseminated.																							
OrderbookSummary	m	This message covers the summary data of an instrument based on the previous day’s trades.																							
<p>BISTECH Data Dissemination System is closed at 19:40 p.m.</p>	<p>This time may change due to operational reasonings.</p>																								

In case a trade executed for a security that is covered under a list, TurnoverListUpdate (“I”) message would be sent intraday since the summation by lists would change.

If needed, for a single security (state level = orderbook) different states may be disseminated.

OrderbookFlush field, existing in different messages, would reset only the fields in the related message and corresponding instrument.

2. BISTECH DERIVATIVES MARKET DATA FLOW

During the standard operations of BISTECH, following market data flow is expected. Nevertheless, there can be differences in the flow depending on the market model of the instrument.

In addition to the flow under mentioned, in case of the single session state changes of instruments, there can be changes in the flow of the related instrument, and different messages can be disseminated.

It is expected that data vendors do not process TIP messages/fields which are not in compliance with BISTECH TIP format. In case of receiving such an information, data vendors should continue to process afterwards incoming information that is consistent with the format.

Start of the Day (06:00)	<p>BISTECH Data Dissemination System starts to disseminate the business date and basic data (not changing throughout the day) for each instrument that would be traded on the same day. Basic data contains descriptive information related to instruments, ISIN, type of security, previous day's summary, and if available, linked sector/list/index information.</p>																																																						
	<p>Dynamic usage of “Id-Symbol” match in BDt, BDm (and etc) messages by data vendors would prevent possible problems in case of “Id-Symbol” changes. It is recommended to use dynamic “Id-Symbol” matching, instead of static “Id-Symbol” matching.</p>																																																						
	<p>Each data vendor should keep the sequence number of each message coming out from the system in their own structure. In later access requests, if it is requested to continue from the last situation just before the disconnection, this sequence number will be used as reconnecting.</p>																																																						
	<p>Here are the message types disseminated within this scope:</p>																																																						
	<table border="1"> <thead> <tr> <th><i>Message</i></th> <th><i>Tag</i></th> <th><i>Description</i></th> </tr> </thead> <tbody> <tr> <td>BasicDataBusinessDate</td> <td>BDBu</td> <td>Defines the business date.</td> </tr> <tr> <td>BasicDataSource</td> <td>BDSr</td> <td>Defines the source system.</td> </tr> <tr> <td>BasicDataExchange</td> <td>BDx</td> <td>Defines the exchange.</td> </tr> <tr> <td>BasicDataMarket</td> <td>BDm</td> <td>Defines the market.</td> </tr> <tr> <td>BasicDataClearingVenue</td> <td>BDCv</td> <td>Defines the clearing venue.</td> </tr> <tr> <td>BasicDataParticipant</td> <td>BDp</td> <td>Defines the participant.</td> </tr> <tr> <td>BasicDataNonTradingDays</td> <td>BDTd</td> <td>Defines the non and half trading days.</td> </tr> <tr> <td>BasicDataIssuer</td> <td>BDIs</td> <td>Defines the issuer.</td> </tr> <tr> <td>BasicDataTableEntry</td> <td>BDTe</td> <td>Defines the table entry.</td> </tr> <tr> <td>BasicDataTickSizeTable</td> <td>BDTs</td> <td>Defines the tick size table.</td> </tr> <tr> <td>BasicDataTickSizeEntry</td> <td>BDTz</td> <td>Defines the tick size entry.</td> </tr> <tr> <td>BasicDataTradable</td> <td>BDt</td> <td>Defines the tradable.</td> </tr> <tr> <td>BasicDataTradableSupplementary</td> <td>BDTr</td> <td>Defines the ISIN of the tradable</td> </tr> <tr> <td>BasicDataUnderlyingInfo</td> <td>BDUi</td> <td>Defines the underlying of a tradable. It will be populated just for Derivatives.</td> </tr> <tr> <td>BasicDataTradingScheme</td> <td>BDTm</td> <td>Defines the trading scheme.</td> </tr> <tr> <td>BasicDataDerivative</td> <td>BDDe</td> <td>Defines the basic data of the derivative.</td> </tr> <tr> <td>BasicDataList</td> <td>BDLi</td> <td>Defines the basic data of the list.</td> </tr> </tbody> </table>	<i>Message</i>	<i>Tag</i>	<i>Description</i>	BasicDataBusinessDate	BDBu	Defines the business date.	BasicDataSource	BDSr	Defines the source system.	BasicDataExchange	BDx	Defines the exchange.	BasicDataMarket	BDm	Defines the market.	BasicDataClearingVenue	BDCv	Defines the clearing venue.	BasicDataParticipant	BDp	Defines the participant.	BasicDataNonTradingDays	BDTd	Defines the non and half trading days.	BasicDataIssuer	BDIs	Defines the issuer.	BasicDataTableEntry	BDTe	Defines the table entry.	BasicDataTickSizeTable	BDTs	Defines the tick size table.	BasicDataTickSizeEntry	BDTz	Defines the tick size entry.	BasicDataTradable	BDt	Defines the tradable.	BasicDataTradableSupplementary	BDTr	Defines the ISIN of the tradable	BasicDataUnderlyingInfo	BDUi	Defines the underlying of a tradable. It will be populated just for Derivatives.	BasicDataTradingScheme	BDTm	Defines the trading scheme.	BasicDataDerivative	BDDe	Defines the basic data of the derivative.	BasicDataList	BDLi	Defines the basic data of the list.
<i>Message</i>	<i>Tag</i>	<i>Description</i>																																																					
BasicDataBusinessDate	BDBu	Defines the business date.																																																					
BasicDataSource	BDSr	Defines the source system.																																																					
BasicDataExchange	BDx	Defines the exchange.																																																					
BasicDataMarket	BDm	Defines the market.																																																					
BasicDataClearingVenue	BDCv	Defines the clearing venue.																																																					
BasicDataParticipant	BDp	Defines the participant.																																																					
BasicDataNonTradingDays	BDTd	Defines the non and half trading days.																																																					
BasicDataIssuer	BDIs	Defines the issuer.																																																					
BasicDataTableEntry	BDTe	Defines the table entry.																																																					
BasicDataTickSizeTable	BDTs	Defines the tick size table.																																																					
BasicDataTickSizeEntry	BDTz	Defines the tick size entry.																																																					
BasicDataTradable	BDt	Defines the tradable.																																																					
BasicDataTradableSupplementary	BDTr	Defines the ISIN of the tradable																																																					
BasicDataUnderlyingInfo	BDUi	Defines the underlying of a tradable. It will be populated just for Derivatives.																																																					
BasicDataTradingScheme	BDTm	Defines the trading scheme.																																																					
BasicDataDerivative	BDDe	Defines the basic data of the derivative.																																																					
BasicDataList	BDLi	Defines the basic data of the list.																																																					

BasicDataListMember	BDLm	Defines the list of the tradable.
BasicDataSector	BDs	Defines the sectoral hierarchy.
BasicDataSectorMember	BDSm	Defines the sector of the tradable.
EndOfBasicData	EOBd	End of BasicData messages.
OrderbookSummary	m	Last trading day's summary data of the tradable.
TradableStatus	Ds	Defines the tradable status.
Statechange	s	State Reset Start
OrderbookReferencePrice	r	Base price valid for that session is disseminated.
SettlementPrice	Sp	Previous trading day's settlement price.
MarginPrice	Mp	Defines the margin price.
Orderbook1	o	Flush (clearance of order information)
Orderbook2	p	Flush (clearance of order information)
Orderbook3	z	Flush (clearance of order information)
Tradestatistics1	u	Flush (clearance of statistics)
Tradestatistics2	v	Flush (clearance of statistics)
Tradestatistics3	w	Flush (clearance of statistics)
Orderbook3	z	Values carried to this state.
OpenInterest	Oi	Open interest at the start of day.
MBPOrderSnapshot	k	Flush (clearance of order information)
OrderbookReferencePrice	r	Upper lower price limits information valid for the following session is disseminated.
News	n	News and system messages
Statechange	s	Non Tradable Period

Continous Trading

As session moves to continuous trading, order book changes, executed trades and statistics related to these trades are disseminated. During the sessions, market data such as weighted average prices, last price and price depth at tradable level is sent. For session changes, "StateChange" message is used. In case of an executed trade, TWAP is calculated in every 10 minutes during the day.

Following messages are sent during this session:

<i>Message</i>	<i>Tag</i>	<i>Description</i>
StateChange	s	2-Continuous
Orderbook1	o	Based on the orders sent to the trading system, changes in the best bid/ask price levels are disseminated.
Orderbook2	p	Based on the orders sent to the trading system, changes in the best bid/ask price levels and quantities are disseminated.
Orderbook3	z	Based on the orders sent to the trading system, changes in the order book (price and quantities) are disseminated.
Trade1	t	The trades executed at equilibrium price during the opening session are disseminated. (Without Buyer&Seller Id's)

	<table border="1"> <tr> <td>Tradestatistics1</td> <td>u</td> <td>Statistics related to executed trades are disseminated.</td> </tr> <tr> <td>Tradestatistics2</td> <td>v</td> <td>Statistics related to executed trades are disseminated.</td> </tr> <tr> <td>Tradestatistics3</td> <td>w</td> <td>Statistics related to executed trades are disseminated.</td> </tr> <tr> <td>MBPOrderSnapshot</td> <td>k</td> <td>Best 10 levels at bid & ask (the level may change) at order book are disseminated.</td> </tr> <tr> <td>MarginPrice</td> <td>Mp</td> <td>Margin price that is calculated in every 1 hour at least after risk batches.</td> </tr> <tr> <td>TurnoverListUpdate</td> <td>l</td> <td>Turnover and tendency of lists calculated in every minute.</td> </tr> </table>	Tradestatistics1	u	Statistics related to executed trades are disseminated.	Tradestatistics2	v	Statistics related to executed trades are disseminated.	Tradestatistics3	w	Statistics related to executed trades are disseminated.	MBPOrderSnapshot	k	Best 10 levels at bid & ask (the level may change) at order book are disseminated.	MarginPrice	Mp	Margin price that is calculated in every 1 hour at least after risk batches.	TurnoverListUpdate	l	Turnover and tendency of lists calculated in every minute.			
Tradestatistics1	u	Statistics related to executed trades are disseminated.																				
Tradestatistics2	v	Statistics related to executed trades are disseminated.																				
Tradestatistics3	w	Statistics related to executed trades are disseminated.																				
MBPOrderSnapshot	k	Best 10 levels at bid & ask (the level may change) at order book are disseminated.																				
MarginPrice	Mp	Margin price that is calculated in every 1 hour at least after risk batches.																				
TurnoverListUpdate	l	Turnover and tendency of lists calculated in every minute.																				
Session Closed	<p>After the session is closed, a SettlementPrice message is sent.</p> <p>Following messages are sent during this session:</p> <table border="1"> <thead> <tr> <th><i>Messages</i></th> <th><i>Tag</i></th> <th><i>Description</i></th> </tr> </thead> <tbody> <tr> <td>StateChange</td> <td>s</td> <td>Derivatives_Session Closed</td> </tr> <tr> <td>SettlementPrice</td> <td>Sp</td> <td>Settlement price of the day that is calculated by the system when the session is closed.</td> </tr> </tbody> </table>	<i>Messages</i>	<i>Tag</i>	<i>Description</i>	StateChange	s	Derivatives_Session Closed	SettlementPrice	Sp	Settlement price of the day that is calculated by the system when the session is closed.												
<i>Messages</i>	<i>Tag</i>	<i>Description</i>																				
StateChange	s	Derivatives_Session Closed																				
SettlementPrice	Sp	Settlement price of the day that is calculated by the system when the session is closed.																				
Settlement Price Dissemination	<p>Following messages are sent during this session:</p> <table border="1"> <thead> <tr> <th><i>Messages</i></th> <th><i>Tag</i></th> <th><i>Description</i></th> </tr> </thead> <tbody> <tr> <td>StateChange</td> <td>s</td> <td>Derivatives_ Settlement Price Dissemination</td> </tr> <tr> <td>OpenInterest</td> <td>Oi</td> <td>Open interest at the end of day</td> </tr> <tr> <td>OrderbookReferencePrice</td> <td>r</td> <td>Upper and lower price limits for that session and base price are disseminated.</td> </tr> <tr> <td>SettlementPrice</td> <td>Sp</td> <td>Settlement price of the day.</td> </tr> </tbody> </table>	<i>Messages</i>	<i>Tag</i>	<i>Description</i>	StateChange	s	Derivatives_ Settlement Price Dissemination	OpenInterest	Oi	Open interest at the end of day	OrderbookReferencePrice	r	Upper and lower price limits for that session and base price are disseminated.	SettlementPrice	Sp	Settlement price of the day.						
<i>Messages</i>	<i>Tag</i>	<i>Description</i>																				
StateChange	s	Derivatives_ Settlement Price Dissemination																				
OpenInterest	Oi	Open interest at the end of day																				
OrderbookReferencePrice	r	Upper and lower price limits for that session and base price are disseminated.																				
SettlementPrice	Sp	Settlement price of the day.																				
End of Day	<p>After the completion of trades at the closing price, end of day process starts and with StateChange message related state “Closed” is sent.Considering the executed trades all day for a single security, end of day summary, price limits valid for next day and etc. are disseminated.</p> <p>Following messages are sent during this session:</p> <table border="1"> <thead> <tr> <th><i>Messages</i></th> <th><i>Tag</i></th> <th><i>Description</i></th> </tr> </thead> <tbody> <tr> <td>Statechange</td> <td>s</td> <td>1-Closed</td> </tr> <tr> <td>Orderbook1</td> <td>o</td> <td>Flush (clearance of order information)</td> </tr> <tr> <td>Orderbook2</td> <td>p</td> <td>Flush (clearance of order information)</td> </tr> <tr> <td>Orderbook3</td> <td>z</td> <td>Flush (clearance of order information)</td> </tr> <tr> <td>OrderbookReferencePrice</td> <td>r</td> <td>Upper and lower price limits for that session and base price are disseminated.</td> </tr> <tr> <td>OrderbookSummary</td> <td>m</td> <td>This message covers the summary data of an instrument based on the today’s trades.</td> </tr> </tbody> </table>	<i>Messages</i>	<i>Tag</i>	<i>Description</i>	Statechange	s	1-Closed	Orderbook1	o	Flush (clearance of order information)	Orderbook2	p	Flush (clearance of order information)	Orderbook3	z	Flush (clearance of order information)	OrderbookReferencePrice	r	Upper and lower price limits for that session and base price are disseminated.	OrderbookSummary	m	This message covers the summary data of an instrument based on the today’s trades.
<i>Messages</i>	<i>Tag</i>	<i>Description</i>																				
Statechange	s	1-Closed																				
Orderbook1	o	Flush (clearance of order information)																				
Orderbook2	p	Flush (clearance of order information)																				
Orderbook3	z	Flush (clearance of order information)																				
OrderbookReferencePrice	r	Upper and lower price limits for that session and base price are disseminated.																				
OrderbookSummary	m	This message covers the summary data of an instrument based on the today’s trades.																				

3. BISTECH INDEX DATA FLOW

During the standard operations of BISTECH, following index data flow is expected. Nevertheless, there can be differences in the flow depending on the index type.

<p>Start of the Day (06:00)</p>	<p>BISTECH Data Dissemination System starts to disseminate basic data including business date, exchange, market, indices and etc.</p> <p>Dynamic usage of “Id-Symbol” match in BDT, BDIn, (and etc.) messages by data vendors would prevent possible problems in case of “Id-Symbol” changes. It is recommended to use dynamic “Id-Symbol” matching, instead of static “Id-Symbol” matching.</p> <p>Each data vendor should keep the sequence number of each message coming out from the system in their own structure. In later access requests, if it is requested to continue from the last situation just before the disconnection, this sequence number will be used as reconnecting.</p> <p>Here are the message types disseminated within this scope:</p> <table border="1"> <thead> <tr> <th><i>Message</i></th> <th><i>Tag</i></th> <th><i>Description</i></th> </tr> </thead> <tbody> <tr> <td>BasicDataBusinessDate</td> <td>BDBu</td> <td>Defines the business date.</td> </tr> <tr> <td>BasicDataSource</td> <td>BDSr</td> <td>Defines the source system.</td> </tr> <tr> <td>BasicDataExchange</td> <td>BDx</td> <td>Defines the exchange.</td> </tr> <tr> <td>BasicDataMarket</td> <td>BDm</td> <td>Defines the market.</td> </tr> <tr> <td>BasicDataClearingVenue</td> <td>BDCv</td> <td>Defines the clearing venue.</td> </tr> <tr> <td>BasicDataNonTradingDays</td> <td>BDTd</td> <td>Defines the non and half trading days.</td> </tr> <tr> <td>BasicDataIssuer</td> <td>BDIs</td> <td>Defines the issuer.</td> </tr> <tr> <td>BasicDataSector</td> <td>BDs</td> <td>Defines the sectoral hierarchy.</td> </tr> <tr> <td>BasicDataSectorMember</td> <td>BDSm</td> <td>Defines the sector of the tradable.</td> </tr> <tr> <td>BasicDataTableEntry</td> <td>BDTe</td> <td>Defines the table entry.</td> </tr> <tr> <td>BasicDataTickSizeTable</td> <td>BDTs</td> <td>Defines the tick size table.</td> </tr> <tr> <td>BasicDataTickSizeEntry</td> <td>BDTz</td> <td>Defines the tick size entry.</td> </tr> <tr> <td>BasicDataTradable</td> <td>BDt</td> <td>Defines the tradable.</td> </tr> <tr> <td>BasicDataIndex</td> <td>BDIn</td> <td>Defines the basic data of the index.</td> </tr> <tr> <td>BasicDataIndexSupplementary</td> <td>BDIp</td> <td>Defines the ISIN of the index.</td> </tr> <tr> <td>BasicDataIndexMember</td> <td>BDIm</td> <td>Connect a tradable to an index.</td> </tr> <tr> <td>IndexSummary</td> <td>Is</td> <td>Summary of the index at the start of day.</td> </tr> <tr> <td>IndexWeight</td> <td>Iw</td> <td>Weight of a constituent in the index at the start of day.</td> </tr> <tr> <td>IndexDivisor</td> <td>INd</td> <td>Divisor of the index at the start of day.</td> </tr> <tr> <td>NonBistIndexMember</td> <td>NBIm</td> <td>Non-Bist index member values at the start of day.</td> </tr> <tr> <td>EndOfBasicData</td> <td>EOBd</td> <td>End of BasicData messages.</td> </tr> </tbody> </table>	<i>Message</i>	<i>Tag</i>	<i>Description</i>	BasicDataBusinessDate	BDBu	Defines the business date.	BasicDataSource	BDSr	Defines the source system.	BasicDataExchange	BDx	Defines the exchange.	BasicDataMarket	BDm	Defines the market.	BasicDataClearingVenue	BDCv	Defines the clearing venue.	BasicDataNonTradingDays	BDTd	Defines the non and half trading days.	BasicDataIssuer	BDIs	Defines the issuer.	BasicDataSector	BDs	Defines the sectoral hierarchy.	BasicDataSectorMember	BDSm	Defines the sector of the tradable.	BasicDataTableEntry	BDTe	Defines the table entry.	BasicDataTickSizeTable	BDTs	Defines the tick size table.	BasicDataTickSizeEntry	BDTz	Defines the tick size entry.	BasicDataTradable	BDt	Defines the tradable.	BasicDataIndex	BDIn	Defines the basic data of the index.	BasicDataIndexSupplementary	BDIp	Defines the ISIN of the index.	BasicDataIndexMember	BDIm	Connect a tradable to an index.	IndexSummary	Is	Summary of the index at the start of day.	IndexWeight	Iw	Weight of a constituent in the index at the start of day.	IndexDivisor	INd	Divisor of the index at the start of day.	NonBistIndexMember	NBIm	Non-Bist index member values at the start of day.	EndOfBasicData	EOBd	End of BasicData messages.
<i>Message</i>	<i>Tag</i>	<i>Description</i>																																																																	
BasicDataBusinessDate	BDBu	Defines the business date.																																																																	
BasicDataSource	BDSr	Defines the source system.																																																																	
BasicDataExchange	BDx	Defines the exchange.																																																																	
BasicDataMarket	BDm	Defines the market.																																																																	
BasicDataClearingVenue	BDCv	Defines the clearing venue.																																																																	
BasicDataNonTradingDays	BDTd	Defines the non and half trading days.																																																																	
BasicDataIssuer	BDIs	Defines the issuer.																																																																	
BasicDataSector	BDs	Defines the sectoral hierarchy.																																																																	
BasicDataSectorMember	BDSm	Defines the sector of the tradable.																																																																	
BasicDataTableEntry	BDTe	Defines the table entry.																																																																	
BasicDataTickSizeTable	BDTs	Defines the tick size table.																																																																	
BasicDataTickSizeEntry	BDTz	Defines the tick size entry.																																																																	
BasicDataTradable	BDt	Defines the tradable.																																																																	
BasicDataIndex	BDIn	Defines the basic data of the index.																																																																	
BasicDataIndexSupplementary	BDIp	Defines the ISIN of the index.																																																																	
BasicDataIndexMember	BDIm	Connect a tradable to an index.																																																																	
IndexSummary	Is	Summary of the index at the start of day.																																																																	
IndexWeight	Iw	Weight of a constituent in the index at the start of day.																																																																	
IndexDivisor	INd	Divisor of the index at the start of day.																																																																	
NonBistIndexMember	NBIm	Non-Bist index member values at the start of day.																																																																	
EndOfBasicData	EOBd	End of BasicData messages.																																																																	

<p>Intra-day</p>	<p>When the calculation starts, “Index Update” message is sent for the real-time indices depending on the dissemination interval. Also depending on the status change “BasicDataIndex” message may also be sent. We are not expecting to launch a new index via hot-insertion.</p> <p>Following messages is sent during this session:</p> <table border="1" data-bbox="432 383 1347 465"> <thead> <tr> <th><i>Message</i></th> <th><i>Tag</i></th> <th><i>Description</i></th> </tr> </thead> <tbody> <tr> <td>IndexUpdate</td> <td>i</td> <td>Index tick.</td> </tr> </tbody> </table>	<i>Message</i>	<i>Tag</i>	<i>Description</i>	IndexUpdate	i	Index tick.												
<i>Message</i>	<i>Tag</i>	<i>Description</i>																	
IndexUpdate	i	Index tick.																	
<p>End of Day</p>	<p>As session moves to close (end of day) a last “IndexUpdate” message will be sent both for real time and batch indices. “IndexSummary”, “IndexWeight” “IndexDivisor”, and “NonBistIndexMember” messages will also be sent depending on the index type at the end of day.</p> <p>Following messages are sent during this session:</p> <table border="1" data-bbox="432 763 1347 1010"> <thead> <tr> <th><i>Message</i></th> <th><i>Tag</i></th> <th><i>Description</i></th> </tr> </thead> <tbody> <tr> <td>IndexUpdate</td> <td>i</td> <td>Index tick.</td> </tr> <tr> <td>IndexSummary</td> <td>Is</td> <td>Summary of the index at the start of day.</td> </tr> <tr> <td>IndexWeight</td> <td>Iw</td> <td>Weight of a constituent in the index at the start of day.</td> </tr> <tr> <td>IndexDivisor</td> <td>INd</td> <td>Divisor of the index at the start of day.</td> </tr> <tr> <td>NonBistIndexMember</td> <td>NBIm</td> <td>Non-Bist index member values at the start of day.</td> </tr> </tbody> </table>	<i>Message</i>	<i>Tag</i>	<i>Description</i>	IndexUpdate	i	Index tick.	IndexSummary	Is	Summary of the index at the start of day.	IndexWeight	Iw	Weight of a constituent in the index at the start of day.	IndexDivisor	INd	Divisor of the index at the start of day.	NonBistIndexMember	NBIm	Non-Bist index member values at the start of day.
<i>Message</i>	<i>Tag</i>	<i>Description</i>																	
IndexUpdate	i	Index tick.																	
IndexSummary	Is	Summary of the index at the start of day.																	
IndexWeight	Iw	Weight of a constituent in the index at the start of day.																	
IndexDivisor	INd	Divisor of the index at the start of day.																	
NonBistIndexMember	NBIm	Non-Bist index member values at the start of day.																	

4. ACCESSING MARKET DATA LOGS OF PREVIOUS DAYS

Via BISTECH Data Dissemination System, it is possible to access the previous dated market data messages up to 20 trading days. While logging in, the requested previous “session” information and date (in YYYYMMDD format) should be entered in order to access the related messages.

5. REDUNDANCY CONFIGURATION / THINGS TO DO DURING FAILOVER

It is requested from data vendors to switch among redundant data connections.

With the BIST warning, the sequence number can restart from 1 intraday (restart of the whole system). In this case, sometimes SoupBinTCP EndOfSession message may also be sent. That's why in some cases SoupBinTCP EndOfSession message does not mean it is the end of day. After that, BISTECH data dissemination system will be opened again with the same SoupBinTCP session beginning from sequence number 1. Therefore, the configuration of data vendors should be prepared to restart intraday sequence number from 1 following the warning via BIST.

In case of the intraday restart of BISTECH Data Dissemination System, all basic data would be re-disseminated similar to the first opening of the system. After all these messages, the trading session state of the system and state of instruments (TradeStatistics, Orderbook, etc.) at that moment are disseminated as a snapshot. On the other hand, there is logic for Trade ("t") and IndexUpdate ("i") messages. In case of intraday restart of data dissemination system, all trades (Trade ("t")) executed till the restart time and index values (IndexUpdate ("i")) of that day are re-disseminated.

6. IMPORTANT ISSUES AS PROCESSING “ORDERBOOK” MESSAGES

As making the developments on orderbook messages, it is important to consider following situation by data vendors:

An order with “0 (zero)” price is possible for Trade at Settlement (.TAS) instruments. Besides, for imbalance, market and market-to-limit orders sent at market price there is no price information. In case of these situations, all price related fields (such as WavgPriceAllBid, WavgPriceAllAsk) would be affected and it is required from vendors to set the price fields as null.

For example;

In the following Orderbook3 message, there are BidVolumeAtLevel and BidOrdersAtVolume fields available, but there is no BidPriceAtLevel field. When processing this message, price information on that level needs to be assigned as “null”.

z;i1846;s1;t104827.476;Bw6.677;Bt6399702;Aw6.932;At8908062;**g1**:441838;**h1**:57;

```
*****
*****          GARAN.E          *****
*****
***** BID ***** ASK *****
## Orders  Volume  Price | Price  Volume  Orders
1   57   441838
```

Similarly, if there is no Aw or Bw fields (Weighted Average Price of all outstanding orders) in the message, but Bt and At (Total Amount of all outstanding orders) are sent as “0”, wavg fields need t be assigned as “null” as well.

z;i1846;s1;t104827.476; **Bt0**; **At0**;

7. IMPORTANT ISSUES AS PROCESSING “STATECHANGE” MESSAGES

In BISTECH markets, session flows may change at market and order book level. Within this scope, it would be beneficial to pay attention to following items.

7.1. General Rules

- Markets get state messages which include just “S11” field.
- Instruments can get state messages which include both “S11” & “S12” fields (One state message can just only have one “SI” field).
- If an instrument gets a “S11” included state message then this instrument will be affected from its market’s state changes after that message.
- If an instrument gets a “S12” included state message then this instrument will not be affected from its market state changes until it gets a state message with “S11” field (Market state changes does not affect this instrument if its state level equals to 2).
- State messages that includes Ms99 field means that vendors must clear all instrument status and state levels under that market and recreate new states and state levels with messages that comes after this message. When a market gets a state which does not include “Ms99” than this means market reset operation ended.

Example:

```
s;i288;s1;t081456.648;Ms99;S11; [MSPOT] <- State Reset  
s;i4110;s1;t081456.649;Ms3;S12; [ISIEM.E] <- Instrument that doesn't run on market level in that market  
s;i288;s1;t081456.650;Ms2;S11; [MSPOT] <- State reset ends.
```

7.2. Market/Orderbook Level Messages

Market level messages can be sent to markets or instruments. “S11” field in state messages refers that identification.

Example:

- 1- s;i288;s1;t081456.648;Ms2;S11; [MSPOT] <- Market level message for a market
- 2- s;i4110;s1;t081456.649;Ms3;S11; [ISIEM.E] <- Market level message for an instrument

If an instrument gets a market level state message, this means instrument must obey market states. (Vendors must set instruments’ status under that market to new status. There will not be any other state message that will be sent for instruments under that market which runs on market level).

Example:

- 1- s;i288;s1;t081456.648;Ms2;S11; [MSPOT] <- Market level message for market
- 2- s;i1216;s1;t081456.653;Ms3;S12; [YESIL.E] <- Orderbook level message for an instrument
- 3- s;i1216;s1;t081456.655;Ms2;S11; [YESIL.E] <- Market level message for an instrument

In this example firstly YESIL.E runs on orderbook level with message #2. But with message #3 its state level changed from orderbook level to market level. After that point, state changes of market of that instrument affect that instrument. There will be no state message to be sent especially for this instrument. It is possible for an instrument not to get any state message until the end of session. This means, state changes of the market of that instrument affect that instrument.

An instrument can get a state change message with “S12” field at any time in a session. At that point state change messages for the market of that instrument do not affect that instrument.

Example:

- 1- s;i288;s1;t081456.648;Ms2;S11; [MSPOT] <- Market gets a market level state message
- 2- s;i1216;s1;t081456.653;Ms3;S12; [YESIL.E] <- Instrument gets an orderbook level state change message

In the example above, YESIL.E will not be affected by its market's state messages after message #2.

Example:

- 1- s;i288;s1;t081456.648;Ms2;S11; [MSPOT] <- Market level message for a market
- 2- s;i1216;s1;t081456.653;Ms3;S12; [YESIL.E] <- Orderbook level message for an instrument
- 3- s;i288;s1;t081456.648;Ms4;S11; [MSPOT] <- Market level message for a market

In the example above, message #3 changes market state to "4" but this will not affect YESIL.E and its state will stay at "3" because its state level set to orderbook level with message #2.

If YESIL.E gets a state change message with "S11" field, this means its state level changes to market level and market messages will affect it.

Example:

- 1- s;i288;s1;t081456.648;Ms2;S11; [MSPOT] <- MSPOT market gets a market level message
- 2- s;i1216;s1;t081456.653;Ms3;S12; [YESIL.E] <- YESIL.E state level set to orderbook level, so market messages will not affect it after that point.
- 3- s;i288;s1;t081456.660;Ms4;S11; [MSPOT] <- MSPOT market goes to state 4. But this will not affect YESIL.E
- 4- s;i1216;s1;t081456.675;Ms4;S11; [YESIL.E] <- YESIL.E gets market level message. No longer is orderbook level effective, market level messages are effective.
- 5- s;i288;s1;t081456.680;Ms2;S11; [MSPOT] <- MSPOT market gets market level message.

In this example; with message #2, YESIL.E leaves market level and follows the orderbook level and with message #4 again it returns following market level. Because of message #5 its state must be set to "2" by data vendors because market level is effective on that instrument.

Sending the status information at start of day:

```
s;i278;s1;t080741.875;Ms99;S11; [MSPOT] ← state reset sequence starts for MSPOT
s;i262;s1;t080741.875;Ms99;S11; [PRMKT]
s;i270;s1;t080741.875;Ms99;S11; [PMOSA]
s;i2014;s1;t080741.938;Ms2;S12; [YONGA.E]
s;i1230;s1;t080741.938;Ms3;S12; [YESIL.E]
s;i1272;s1;t080741.946;Ms2;S12; [YBTAS.E]
s;i724;s1;t080741.946;Ms5;S12; [UZERB.E]
s;i1670;s1;t080741.949;Ms2;S12; [TRNSK.E]
s;i1480;s1;t080741.953;Ms2;S12; [TCHOL.E]
s;i698;s1;t080741.953;Ms3;S12; [SODSN.E]
s;i278;s1;t080741.875;Ms2;S11; [MSPOT] ← state reset sequence ends for MSPOT
s;i262;s1;t080741.875;Ms2;S11; [PRMKT]
s;i270;s1;t080741.875;Ms2;S11; [PMOSA]
```

In the example above with state messages that are sent from data dissemination system, YONGA.E, YESIL.E, YBTAS.E, UZERB.E, TRNSK.E, TCHOL.E, SODSN.E state level change from market level to orderbook level and with this information these instruments will get state message individually (until a state message with a field "S11" for that instruments). The state of the other instruments under that market (MSPOT) must be set to same state as MSPOT state. And they will not get extra state messages for their state. Markets can get state 99 (Ms99) message at the start of the day or intraday. At such a situation, vendors must clear and then recreate the status of the markets and instruments from the beginning. For example if an instrument previously got a state message with "S12" field, after state message which

includes Ms99 field it must return to follow the market level. If it gets a state message with “S12” field again in state reset sequence, then its state level must change to orderbook level.

Example state message flow with “S12” field:

s;i278;s1;t145038.682;Ms99;S11; [MSPOT] <- Market state reset sequence start.
s;i2012;s1;t145038.842;Ms4;S12; [AKSA.E] <- State of AKSA.E is changed to opening session (Left market message level).
s;i278;s1;t145512.867;Ms4;S11; [MSPOT] <- Market state reset ends. Market goes to opening session (AKSA.E has already in opening session).
s;i278;s1;t145737.259;Ms3;S11; [MSPOT] <- Market state changed to uncrossing (AKSA.E is still in opening session).
s;i278;s1;t145812.867;Ms2;S11; [MSPOT] <- Market state changed to continuous session (AKSA.E is still in opening session).
s;i2012;s1;t145846.259;Ms10;S12; [AKSA.E] <- AKSA.E suspended.
s;i278;s1;t145937.259;Ms5;S11; [MSPOT] <- Market state changed to closing session.
s;i2012;s1;t145938.842;Ms5;S11; [AKSA.E] <- AKSA.E’s state changed to closing session and state level changed to market level. (S1=1)
s;i278;s1;t150037.259;Ms3;S11; [MSPOT] <- Market state changed to uncrossing (AKSA.E’s state must be changed from closing session to uncrossing by vendor. AKSA.E will not get any other message because its state level changed to market level with previous message, “s;i2012;s1;t145038.842;Ms5;S11; [AKSA.E] “).
s;i278;s1;t150137.259;Ms1;S11; [MSPOT] <- Market closed (AKSA.E is also closed with market. Vendors must close this instrument).

8. IMPORTANT ISSUES AS PROCESSING “MARKETMAKERQUOTE” MESSAGES

As making the developments for “MarketMakerQuote” message in BISTECH Data Dissemination, it is important to consider the following issue by data vendors:

In case there is a change in bid or ask quotation values, both bid and ask information is disseminated “MarketMakerQuote” message. On the other hand, whenever there is quotations at both bid and ask sides, and one side is deleted, the information related to the deleted side is not disseminated. For these messages, the bid/ask quotation information of the related instrument that is not stated in the message should be set as “null” by the data vendors.

Please examine the following example:

q;i1882;s1;t120515.928;Pb12.84; → Ask Quotation Price should be set as “null”
y;i1882;s1;t120515.928;Pb12.84;Vb1; → Ask Quotation Price & Volume should be set as “null”

Similarly, whenever there is quotation at both bid and ask sides, and both sides are deleted, no information for bid and ask sides is disseminated. For these messages, both bid and ask quotation information of the related instrument that is not stated in the message should be set as “null” by the data vendors.

Please examine the following example:

q;i6374;s1;t120407.092; → Bid & Ask Quotation Price should be set as “null”
y;i6374;s1;t120407.092; → Bid & Ask Quotation Price & Volume should be set as “null”

9. IMPORTANT EXPLANATIONS FOR OTHER MESSAGES

- a)** BasicDataShare > TotalIssue: This field would be blank in Phase 2.
- b)** BasicDataDerivative > TotalIssue: This field would be blank in Phase 2.
- c)** BasicDataRight > TotalIssue: This field would be blank in Phase 2.
- d)** BasicDataShare > AvailableQtyStartDate, AvailableQtyEndDate: These fields may be blank for some instruments.
- e)** BasicDataUnderlyingInfo: This message would be populated just for Derivatives Market instruments in Phase2.
- f)** BasicDataTradable > ClearingVenueId: This field represents the clearing venue defined in BasicDataClearingVenue message, and following the specification of clearing venue this field would be filled.
- g)** BasicDataTradable > NoOfSettlementDays: This field would be blank as long as there is no specification for this information.
- h)** BasicDataIndex > SectorId: This field would be blank in Phase 2.
- i)** IndexSummary > OpenValue: This field would be blank in start-of-day messages, and would show the first tick value of an index at the end of day message.
- j)** BasicDataRight > Exercise from/to date: These fields refer the open/end dates of Rights Coupon Market.
- k)** BasicDataTradable > Symbol: This field's character size is set to 32 at maximum whereas for each instrument different number of characters can be disseminated. It is crucial to make developments to handle this symbol structure by data vendors.
- l)** VWAPDiffPer: This field would be disseminated as "zero" whenever the previous day's "closing VWAP" is empty.
- m)** Trade, TradeStatistics: There is not a single TradeStatistics message for a single Trade message. TradeStatistics message shows the statistics occurred as a result of all trades that are executed as of the execution time.

On the other hand, FTP files would be received via BISTConnect by data vendors, and it is the responsibility of data vendors to access this infrastructure and test the connection.

10. CONTENT OF DATA PACKAGES

Brief information related to the contents of Data provided by Borsa İstanbul via BISTECH TIP format is given below.

10.1. Equity Market Data Packages

Data Package: “BORSA İSTANBUL END OF DAY DATA”

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	OrderbookSummary
BasicDataClearingVenue	
BasicDataExchange	
BasicDataIssuer	
BasicDataMarket	
BasicDataNonTradingDays	
BasicDataSector	
BasicDataSectorMember	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	
BasicDataTickSizeTable	
BasicDataTradable	
EndOfBasicData	

Data Package: “BORSA İSTANBUL LIMITED LEVEL 1 DATA”

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	CorporateAction
BasicDataClearingVenue	News
BasicDataDerivative	OrderbookSummary
BasicDataExchange	StateChange
BasicDataFund	TradeStatistics1
BasicDataIssuer	
BasicDataMarket	
BasicDataNonTradingDays	
BasicDataParticipant	
BasicDataRight	
BasicDataSector	
BasicDataSectorMember	
BasicDataShare	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	
BasicDataTickSizeTable	
BasicDataTradable	
BasicDataTradingScheme	
EndOfBasicData	

Data Package: “BORSA İSTANBUL LEVEL 1 DATA”

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	CorporateAction
BasicDataClearingVenue	MarketMakerQuote1

BasicDataDerivative	News
BasicDataExchange	Orderbook1 (defined at the price level of 1/best bid & ask prices)
BasicDataFund	OrderbookReferencePrice
BasicDataIssuer	OrderbookSummary
BasicDataMarket	StateChange
BasicDataNonTradingDays	TradeStatistics2
BasicDataParticipant	
BasicDataRight	
BasicDataSector	
BasicDataSectorMember	
BasicDataShare	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	
BasicDataTickSizeTable	
BasicDataTradable	
BasicDataTradingScheme	
EndOfBasicData	

Data Package: "BORSA İSTANBUL LEVEL 1+ DATA"

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	CallInformation2
BasicDataClearingVenue	CorporateAction
BasicDataDerivative	MarketMakerQuote1
BasicDataExchange	News
BasicDataFund	Orderbook2 (defined at the price level of 1/best bid & ask prices)
BasicDataIssuer	OrderbookReferencePrice
BasicDataList	OrderbookSummary*
BasicDataListMember	StateChange
BasicDataMarket	Trade1
BasicDataNonTradingDays	TradeStatistics3
BasicDataParticipant	TurnoverListUpdate
BasicDataRight	
BasicDataSector	
BasicDataSectorMember	
BasicDataShare	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	
BasicDataTickSizeTable	
BasicDataTradable	
BasicDataTradingScheme	
EndOfBasicData	

Data Package: "BORSA İSTANBUL LEVEL 2 DATA"

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	CallInformation2
BasicDataClearingVenue	CorporateAction
BasicDataDerivative	News
BasicDataExchange	MarketMakerQuote1
BasicDataFund	Orderbook 3 (defined at the price level of 10/best bid & ask prices)

BasicDataIssuer	OrderbookReferencePrice
BasicDataList	OrderbookSummary*
BasicDataListMember	StateChange
BasicDataMarket	Trade1
BasicDataNonTradingDays	TradeStatistics3
BasicDataParticipant	TurnoverListUpdate
BasicDataRight	
BasicDataSector	
BasicDataSectorMember	
BasicDataShare	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	
BasicDataTickSizeTable	
BasicDataTradable	
BasicDataTradingScheme	
EndOfBasicData	

10.2. Derivatives Market Data Packages

Data Package: "BORSA ISTANBUL END OF DAY DATA"

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	OrderbookSummary
BasicDataClearingVenue	
BasicDataExchange	
BasicDataIssuer	
BasicDataMarket	
BasicDataNonTradingDays	
BasicDataSector	
BasicDataSectorMember	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	
BasicDataTickSizeTable	
BasicDataTradable	
EndOfBasicData	

Data Package: "BORSA İSTANBUL LIMITED LEVEL 1 DATA"

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	News
BasicDataClearingVenue	OrderbookSummary
BasicDataComboLeg	StateChange
BasicDataDerivative	TradableStatus
BasicDataExchange	TradeStatistics1
BasicDataIssuer	
BasicDataMarket	
BasicDataNonTradingDays	
BasicDataParticipant	
BasicDataSector	
BasicDataSectorMember	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	

BasicDataTickSizeTable	
BasicDataTradable	
BasicDataTradingScheme	
BasicDataUnderlyingInfo	
EndOfBasicData	

Data Package: “BORSA İSTANBUL LEVEL 1 DATA”

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	MarginPrice
BasicDataClearingVenue	News
BasicDataComboLeg	Orderbook1 (defined at the price level of 1/best bid & ask prices)
BasicDataDerivative	OrderbookReferencePrice
BasicDataExchange	OrderbookSummary*
BasicDataIssuer	SettlementPrice
	StateChange
	TradableStatus
BasicDataMarket	TradeStatistics2
BasicDataNonTradingDays	
BasicDataParticipant	
BasicDataSector	
BasicDataSectorMember	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	
BasicDataTickSizeTable	
BasicDataTradable	
BasicDataTradingScheme	
BasicDataUnderlyingInfo	
EndOfBasicData	

Data Package: “BORSA İSTANBUL LEVEL 1+ DATA”

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	MarginPrice
BasicDataClearingVenue	News
BasicDataComboLeg	OpenInterest
BasicDataDerivative	Orderbook2 (defined at the price level of 1/best bid & ask prices)
BasicDataExchange	OrderbookReferencePrice
BasicDataIssuer	OrderbookSummary*
BasicDataList	SettlementPrice
BasicDataListMember	StateChange
BasicDataMarket	TradableStatus
BasicDataNonTradingDays	Trade1
BasicDataParticipant	TradeStatistics3
BasicDataSector	TurnoverListUpdate
BasicDataSectorMember	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	
BasicDataTickSizeTable	
BasicDataTradable	
BasicDataTradingScheme	
BasicDataUnderlyingInfo	

EndOfBasicData	
----------------	--

Data Package: “BORSA İSTANBUL LEVEL 2 DATA”

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	MarginPrice
BasicDataClearingVenue	News
BasicDataComboLeg	OpenInterest
BasicDataDerivative	Orderbook 3 (defined at the price level of 10/best bid & ask prices)
BasicDataExchange	OrderbookReferencePrice
BasicDataIssuer	OrderbookSummary*
BasicDataList	SettlementPrice
BasicDataListMember	StateChange
BasicDataMarket	TradableStatus
BasicDataNonTradingDays	Trade1
BasicDataParticipant	TradeStatistics3
BasicDataSector	TurnoverListUpdate
BasicDataSectorMember	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	
BasicDataTickSizeTable	
BasicDataTradable	
BasicDataTradingScheme	
BasicDataUnderlyingInfo	
EndOfBasicData	

10.3. Index Products Data Packages

Data Package: “BORSA İSTANBUL INDICES END OF DAY DATA”

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	IndexSummary
BasicDataClearingVenue	
BasicDataExchange	
BasicDataIndex	
BasicDataIndexMember	
BasicDataIndexSupplementary	
BasicDataIssuer	
BasicDataMarket	
BasicDataNonTradingDays	
BasicDataSector	
BasicDataSectorMember	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	
BasicDataTickSizeTable	
BasicDataTradable	
EndOfBasicData	

Data Package: “BORSA İSTANBUL INDICES”

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	IndexUpdate
BasicDataClearingVenue	IndexSummary
BasicDataExchange	
BasicDataIndex	
BasicDataIndexMember	
BasicDataIndexSupplementary	
BasicDataIssuer	
BasicDataMarket	
BasicDataNonTradingDays	
BasicDataSector	
BasicDataSectorMember	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	
BasicDataTickSizeTable	
BasicDataTradable	
EndOfBasicData	

10.4. Reference Data Packages

Data Package: “REFERENCE DATA - INDEX CONSTITUENTS”

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	IndexDivisor
BasicDataClearingVenue	IndexWeight
BasicDataExchange	
BasicDataIndex	
BasicDataIndexMember	
BasicDataIndexSupplementary	
BasicDataIssuer	
BasicDataMarket	
BasicDataNonTradingDays	
BasicDataSector	
BasicDataSectorMember	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	
BasicDataTickSizeTable	
BasicDataTradable	
EndOfBasicData	

Data Package: “REFERENCE DATA - DESCRIPTIVE DATA”(*)

BasicData Messages	RealTimeData Messages
BasicDataTradableSupplementary	
BasicDataIndexSupplementary	
EndOfBasicData	
BasicDataSource	

Note: (*) Please note that this data package is not currently available.

10.5. Data Analytics Packages

Data Package: "BORSA İSTANBUL EQUITY MARKET DATA ANALYTICS"

BasicData Messages	RealTimeData Messages
BasicDataBusinessDate	CorporateAction
BasicDataClearingVenue	News
BasicDataDerivative	StateChange
BasicDataExchange	
BasicDataFund	
BasicDataIndex	
BasicDataIndexMember	
BasicDataIndexSupplementary	
BasicDataIssuer	
BasicDataList	
BasicDataListMember	
BasicDataMarket	
BasicDataNonTradingDays	
BasicDataParticipant	
BasicDataRight	
BasicDataSector	
BasicDataSectorMember	
BasicDataShare	
BasicDataSource	
BasicDataTableEntry	
BasicDataTickSizeEntry	
BasicDataTickSizeTable	
BasicDataTradable	
BasicDataTradingScheme	
EndOfBasicData	