S&P Capital IQ Real-Time Solutions

FeedOS™ Feed Description

BORSA ISTANBUL

Reference n°: 20150311 – 17488 – 21421

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FEEDOS™ BORSA ISTANBUL FEED DESCRIPTION

As part of S&P Capital IQ Real-Time Solutions FeedOS™ documentation, this feed description provides you with details about the types of data broadcast on the BORSA ISTANBUL market data stream, their possible values and current FeedOS technical implementation.

The topics this feed description covers include:

1. Referential Data

The following sections describe the characteristics of the referential data on the BORSA ISTANBUL market data stream, in terms of:

1.1. Available Markets and Branches

This section details the list of Markets and Branches available on the BORSA ISTANBUL market data stream.

1.1.1. Markets

The BORSA ISTANBUL market data stream disseminates informations about the following markets:

Table 1 List of markets available on the BORSA ISTANBUL market data stream

FeedOS Market ID	Market
XIST	Istanbul Stock Exchange

The following example shows the complete list of markets available on the BORSA ISTANBUL market data stream and their IDs, returned by the `dumps` command:

```
MARKETS
market # 271    CC=TR/TURKEY/ISTAMBUL,DESCR=ISTANBUL STOCK EXCHANGE,WEB=www.ise.org
    MIC = XIST
    TimeZone = Europe/Istanbul
    Country = TR
    NbMaxInstruments = 2000000
```

1.1.2. Branches

The example below shows the complete list of branches available on the BORSA ISTANBUL market data stream for each market, returned by the `dumps` command. Each branch displays the following details: `FOSMarketID`, `SecurityType`, `CFICode` and `Quantity` (of instruments):

```
BRANCHES
    { XIST CS     ESPXXX } qty: 432
    { XIST INDEX  TIXXXX } qty: 58
    { XIST ETF    EUXXXE } qty: 15
    { XIST WAR    RWXXXX } qty: 496
```

1.2. Types of Instruments

The following sections describe the instruments available on the BORSA ISTANBUL market data stream, according to their type:

- 1.2.1. Indices
- 1.2.2. Equities
- 1.2.3. Warrants.

Caution	The tags `Description` (107, String) and `ISIN` (9503, String) are not disseminated in the Referential Data of the BORSA ISTANBUL market data stream.

1.2.1. Indices

The sample below illustrates the details of an index:

```
instr # 271/1000 = 568329192
    Symbol                      string{XU100}
    SecurityType                string{INDEX}
    FOSMarketId                 XIST
    CFICode                     string{TIXXXX}
    InternalCreationDate        Timestamp{2015-03-10 06:50:22:441}
    InternalModificationDate    Timestamp{2015-03-10 06:50:22:441}
    InternalSourceId            uint16{737}
    InternalEntitlementId       int32{1193}
    LocalCodeStr                string{XU100}
    OperatingMIC                string{XIST}
    SegmentMIC                  string{XEQY}
```

1.2.2. Equities

The sample below illustrates the details of an equity:

```
instr # 271/1152 = 568329344
    PriceCurrency               string{TRY}
    Symbol                      string{GARAN_N_E}
    SecurityType                string{CS}
    FOSMarketId                 XIST
    CFICode                     string{ESPXXX}
    InternalCreationDate        Timestamp{2015-03-10 06:50:23:669}
    InternalModificationDate    Timestamp{2015-03-10 15:33:00:446}
    InternalSourceId            uint16{737}
    InternalEntitlementId       int32{1193}
    LocalCodeStr                string{GARAN_N_E}
    PriceIncrement_dynamic_TableId   uint32{43647076}
    OperatingMIC                string{XIST}
    SegmentMIC                  string{XEQY}
```

1.2.3. Warrants

The sample below illustrates the details of a warrant:

```
instr # 271/1962 = 568330154
    PriceCurrency               string{TRY}
    Symbol                      string{YKIVT_K_V}
    SecurityType                string{WAR}
    FOSMarketId                 XIST
    CFICode                     string{RWXXXX}
    InternalCreationDate        Timestamp{2015-03-10 06:50:24:005}
    InternalModificationDate    Timestamp{2015-03-10 15:33:02:122}
    InternalSourceId            uint16{737}
    InternalEntitlementId       int32{1193}
    LocalCodeStr                string{YKIVT_K_V}
    PriceIncrement_dynamic_TableId   uint32{43647078}
    OperatingMIC                string{XIST}
    SegmentMIC                  string{XEQY}
```

1.3. Specific Referential Tags

The following sections describe specific referential tags available on the BORSA ISTANBUL market data stream:

1.3.1. LocalCodeStr

The values of the referential tag **LocalCodeStr** conveyed on the BORSA ISTANBUL market data stream are disseminated via FeedOS data stream in *Referential* to specify the security local code.

FeedOS implementation of the values currently available for the tag `LocalCodeStr` is described in the table below:

Table 2 LocalCodeStr – technical implementation in FeedOS

Component	Value	Description
Tag Name	`LocalCodeStr`	FeedOS tag name.
Numeric ID	`9500`	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`String`	String data type.
Format	*`[Symbol_MarketCode_SeriesCode]`*	An ***exchange specific value***, detailing the security local code.
Possible Values		**Market Code**
	`N`	1st National Market / Listed Securities
	`L`	2nd National Market
	`Y`	New Companies Market
	`W`	Watch List Market
	`K`	Collective Products Market
	`G`	Developing Companies Market
	`S`	Free Trade Platform
		Series Code
	`E`	Old Market
	`Y`	New Market
	`BE`	Primary Market – Old (“E”) series stocks
	`BY`	Primary Market – New (“Y”) series stocks
	`BF`	Primary Market – ETF (“F”) series stocks
	`R`	Rights Coupon Market
	`F`	Exchange Traded Funds
	`V`	Warrants Market
	`C`	Certificate Market

1.3.2. OperatingMIC

The values of the referential tag **OperatingMIC** conveyed on the BORSA ISTANBUL market data stream are disseminated via FeedOS data stream in *Referential* to specify the parent MIC.

FeedOS implementation of the tag `OperatingMIC` is described in the table below:

Table 3 OperatingMIC – technical implementation in FeedOS

Component	Value	Description
Tag Name	`OperatingMIC`	FeedOS tag name.
Numeric ID	`9533`	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`String`	String data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, specifying the parent MIC.
Possible Values	`XIST`	Borsa Istanbul

1.3.3. SegmentMIC

The values of the referential tag **SegmentMIC** conveyed on the BORSA ISTANBUL market data stream are disseminated via FeedOS data stream in *Referential* to specify the child MIC.

FeedOS implementation of the tag `SegmentMIC` is described in the table below:

Table 4 SegmentMIC – technical implementation in FeedOS

Component	Value	Description
Tag Name	`SegmentMIC`	FeedOS tag name.
Numeric ID	`9534`	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`String`	String data type.
Format	***`[Exchange Specific Value]`***	An ***exchange specific value***, specifying the child MIC.
Possible Values	`XEQY`	Borsa Istanbul - Equity Market

2. Quotation Data

The sections below describe the characteristics of the quotation data on the BORSA ISTANBUL market data stream, in terms of:

2.1. Quotation Values

The example below shows the possible values of an instrument on the BORSA ISTANBUL market data stream:

```
InstrumentStatusL1
-- 271/1152
        BID: 8.18       220257  @50
        ASK: 8.19       348921  @10
        LastPrice                       float64{8.18}
        LastTradeQty                    float64{2000}
        DailyHighPrice                  float64{8.33}
        DailyLowPrice                   float64{8.17}
        DailyTotalVolumeTraded          float64{157118675}
        DailyTotalAssetTraded           float64{1308483828.70002}
        LastTradePrice                  float64{8.18}
        LastTradeTimestamp              Timestamp{2015-03-10 15:39:58}
        InternalDailyOpenTimestamp      Timestamp{2015-03-10 07:31:01:823}
        InternalDailyCloseTimestamp     Timestamp{2015-03-10 15:30:00:080}
        InternalPriceActivityTimestamp  Timestamp{2015-03-10 15:39:58:501}
        LowLimitPrice                   float64{7.92}
        HighLimitPrice                  float64{8.42}
        TradingStatus                   18=NotAvailableForTrading
        TradingSessionId                int8{2}
        SessionTotalOffBookAssetTraded  float64{0}
        SessionTotalOffBookVolumeTraded float64{0}
        PriorSessionsTotalAssetTraded   float64{670276897.870006}
        PriorSessionsTotalVolumeTraded  float64{0}
        PriorSessionsTotalOffBookAssetTraded    float64{0}
        PriorSessionsTotalOffBookVolumeTraded   float64{0}
        SessionTotalVolumeTraded        float64{77363564}
        SessionOpeningPrice             float64{8.25}
        PreviousSessionClosingPrice     float64{8.27}
        SessionVWAPPrice                float64{8.25}
        SessionTotalAssetTraded         float64{638206930.830005}
        SessionClosingPrice             float64{8.18}
        DailyClosingPrice               float64{8.18}
        PreviousDailyTotalVolumeTraded  float64{197385578}
        PreviousDailyTotalAssetTraded   float64{1692234170.35}
        PreviousDailyClosingPrice       float64{8.57}
        PreviousBusinessDay             Timestamp{2015-03-05}
        CurrentBusinessDay              Timestamp{2015-03-10}
        InternalDailyClosingPriceType   char{a}
        PriceActivityMarketTimestamp    Timestamp{2015-03-10 15:39:58}
        TradingReferencePrice           float64{8.4}
```

For more details about the fields and tags available in quotation data type, and their possible values, see *FeedOS Quotation Tags Guide*.

2.2. Trading Status

Each time a modification of the trading status occurs, the values of the quotation tag **TradingStatus** conveyed on the BORSA ISTANBUL market data stream are disseminated via FeedOS data stream in *Other Values*:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#

- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag **Trading Status** is described in the table below:

Table 5 Trading Status of the BORSA ISTANBUL market data stream – technical implementation in FeedOS

Component	Value	Description
Tag Name	`TradingStatus`	FeedOS tag name.
Numeric ID	9100	FeedOS unique ID broadcast on the S&P Capital IQ Real-Time Solutions data stream. It is the numeric equivalent of the tag name.
Type	`Enum`	Enumeration data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, as described below, concerning the characteristics of the trading status.
Possible Values	2	Trading Halt
	16	Trade Dissemination Time
	17	Ready to Trade
	18	Not Available for Trading

2.3. Specific Quotation Tags

The following section describe the specific quotation tags available on the BORSA ISTANBUL market data stream:

- 2.3.1. Other Values.

2.3.1. Other Values

The following sections describe the specific quotation tags available on the BORSA ISTANBUL market data stream:

- 2.3.2. InternalDailyClosingPriceType.

2.3.2. InternalDailyClosingPriceType

The values of the quotation tag **InternalDailyClosingPriceType** conveyed on the BORSA ISTANBUL market data stream are disseminated via FeedOS data stream in *Other Values* to indicate the type of the internal daily closing price:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag `InternalDailyClosingPriceType` is described in the table below (the values currently disseminated are highlighted in green):

Table 6 InternalDailyClosingPriceType – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`InternalDailyClosingPriceType`	FeedOS tag name.
Numeric ID	9155	FeedOS unique ID disseminated on S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	Char	Char data type.
Format	*[Internal Specific Value]*	An ***internal specific value***, detailing the type of daily closing price, as described below.
Possible Values	0	**Undefined**
	a	**Official Close** – Explicit closing price value calculated and distributed by an exchange for the main trading session of a given trading day.
	b	**Official Indicative** – Exchange has provided an indicative price and marked it as indicative, however no trading activity is observed.
	c	**Official Carry Over** – Explicit Closing price value from a previous trading day carried forward by the exchange to the given trading day.
	d	**Last Price** – Final price disseminated by the exchange for the main trading session or dissemination period of a given trading day (for indices).
	e	**Last Eligible Price** – Execution price of the final trade (subject to trade qualifiers) accepted by the exchange for the main trading session of a given trading day.
	z	**Manual** – Price disseminated manually (in case of production correction).

2.4. MBL, MBO and BBO Data*

The MBL book has a 5-level depth. The BBO is based on the exchange MBL instead of the exchange BBO. There is no MBO.

3. Official Closing Price

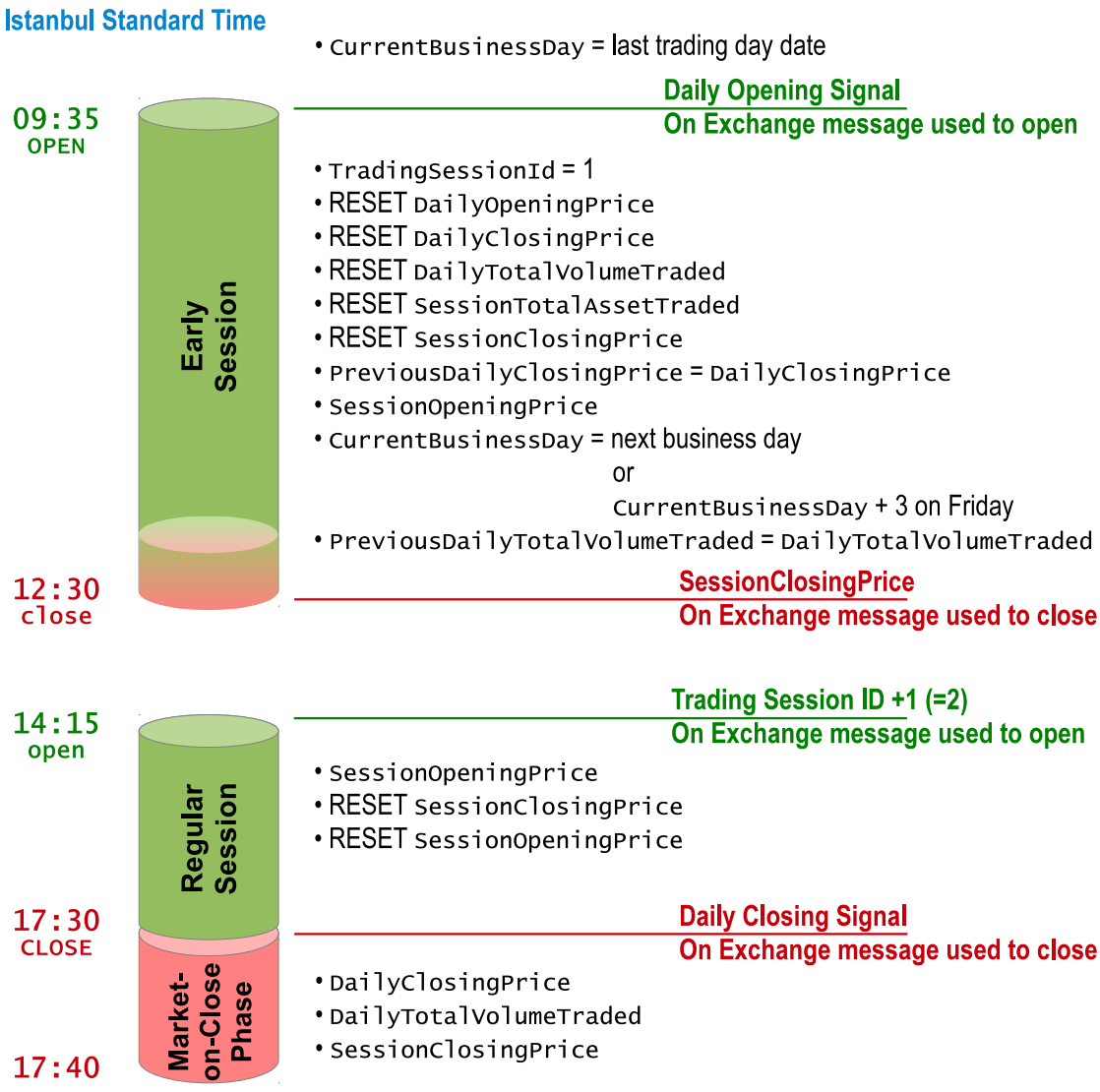
The closing price is the last trade price upon close, as provided by the exchange. If the instrument has an auction phase, the market sends the last auction price, which becomes the closing price. When a stock splits, the closing price is adjusted after the closing.

* The MBL, MBO and BBO data may not be included by default in your Level1 data subscription, but sold separately. Depending on your contract, additional terms, conditions and fees may apply. For more details about the subscription options, please contact S&P Capital IQ Real-Time Solutions.

4. Multi-Session Kinematics

The following diagram describes the main trading phases and the update mechanism of the tags on the BORSA ISTANBUL market data stream:

Figure 1 Update mechanism of the tags on the BORSA ISTANBUL market data stream during a regular trading day (Equity Market)



5. Special Behavior

The following sections describe the special behavior of the BORSA ISTANBUL market data stream:

- 5.1. Market Maker Quotations.

5.1. Market Maker Quotations

A Market Maker is a member that fulfills the basic market making criteria and whose application for market making has been accepted by Borsa Istanbul Board. Market makers are expected to prevent any extreme price movements which may occur as a result of short term supply-demand imbalances in securities that have insufficient depth for continuous auction trading and whose free floating market capitalization is low; to provide liquidity to the market on a continuous basis, and thereby to contribute to the efficient improvement of the continuous auction environment.

Quotation refers to a notification of price and quantity in the form of a bid or ask order sent by a market maker member, and which defines the price range within which the security can be traded in consideration of the values during the trading session.

Quotation orders with a quantity can be executed. However, if an order does not have a quantity (zero quantity for bid, ask or both of them), it can not be executed, just used to define the price range. Trades can still be executed at the quotation price given for the instrument. Moreover, in the price quotation, the price cannot be zero.

Below is an example showing market maker quotations:

```
“TE (TradeEvent) : MARKET_TIME INSTRUMENT LAST_PRICE TRADE_QTY BID_PRICE BID_QTY ASK_PRICE
ASK_QTY *CONTENT_MASK* *FLAGS*"
"VU (ValuesUpdate) : SERVER_TIME INSTRUMENT VALUES..."
"SI (TradeEvent) *SIGNAL* : SERVER_TIME INSTRUMENT SIGNAL LAST_PRICE"

TE   12:14:14:000   569329873   *       *       0.37    0@1     0.38    0@1
TE   12:14:42:000   569329873   *       *       0.38    0@1     0.39    0@1
TE   12:14:42:000   569329873   *       *       0.37    0@1     0.38    0@1
TE   12:14:44:000   569329873   *       *       0.38    0@1     0.39    0@1
TE   12:14:45:000   569329873   *       *       0.37    0@1     0.38    0@1
SI   12:15:00:000   569329873   open    *
TE   12:15:00:000   569329873   *       *       *       *       *       *       o
VU   12:15:00:000   569329873   TradingSessionId=2      TradingStatus=17
TE   12:15:01:000   569329873   *       *       0.37    50000@1 0.38    50000@1
TE   12:15:03:000   569329873   *       *       0.38    50000@1 0.39    50000@1
TE   12:15:04:000   569329873   *       *       0.37    50000@1 0.38    50000@1
TE   12:15:11:000   569329873   *       *       0.37    50000@1 0.38    50000@1
TE   12:15:15:000   569329873   *       *       0.38    50000@1 0.39    50000@1
TE   12:27:02:000   569329873   *       *       0.37    50000@1 0.38    50000@1
TE   12:36:14:000   569329873   0.37    *       *       *       *       *
VU   12:36:14:000   569329873   LastTradeQty=5  SessionTotalVolumeTraded=5
DailyHighPrice=0.37     DailyLowPrice=0.37      SessionVWAPPrice=0.37
TE   12:36:14:000   569329873   0.37    5       *       *       *       *
TradeID=00214629
TE   12:36:14:000   569329873   *       *       0.37    49995@1 *       *
TE   12:47:29:000   569329873   *       *       0.38    50000@1 0.39    50000@1
TE   12:47:38:000   569329873   0.38    5       *       *       *       *
TradeID=00229719
TE   12:47:38:000   569329873   *       *       0.38    49995@1 *       *
VU   12:47:38:000   569329873   SessionTotalVolumeTraded=10     DailyHighPrice=0.38
SessionVWAPPrice=0.38
```

6. Finding the Latest Information

For the latest documentation and product updates, additional support and training, please contact our support services one of the following ways:

- E-mail: rts-support@spcapitaliq.com
- Web: https://support.quanthouse.com.