



S&P Capital IQ Real-Time Solutions

FeedOS™ Feed Description

TSE EQUITIES

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FEEDOS™ TSE FEED DESCRIPTION

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

The topics this feed description covers include:

- 1. Referential Data
- 2. Quotation Data
- 3. Closing Price
- 4. Multi-Session Kinematics
- 5. Special Behavior
- 6. Finding the Latest Information.

1. Referential Data

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

- 1.1. Available Markets and Branches
- 1.2. Types of Instruments.

1.1. Available Markets and Branches

This section details the list of markets and branches available on the TSE market data stream:

- 1.1.1. Markets
- 1.1.2. Branches.

1.1.1. Markets

The TSE market data stream broadcasts informations about the following markets:

Table 1 List of markets available on the TSE market data stream

FeedOS Market ID	Market
XFKA	Fukuoka Stock Exchange
XNGO	Nagoya Stock Exchange
XSAP	Sapporo Securities Exchange
XTKS	Tokyo Stock Exchange

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

```
MARKETS
market # 135
               CC=JP/JAPAN/FUKUOKA, DESCR=FUKUOKA STOCK EXCHANGE, WEB=www.fse.or.jp
   MIC = XFKA
   TimeZone = Asia/Tokyo
    Country = JP
    NbMaxInstruments = 2000000
market # 136
               CC=JP/JAPAN/NAGOYA, DESCR=NAGOYA STOCK EXCHANGE, WEB=www.nse.or.jp/e/
index.html
    MIC = XNGO
   TimeZone = Asia/Tokyo
    Country = JP
    NbMaxInstruments = 2000000
market # 142 CC=JP/JAPAN/SAPPORO, DESCR=SAPPORO SECURITIES EXCHANGE,
WEB=www.tokeidai.co.jp/sse
   MIC = XSAP
   TimeZone = Asia/Tokyo
    Country = JP
    NbMaxInstruments = 2000000
                CC=JP/JAPAN/TOKYO, DESCR=TOKYO STOCK EXCHANGE, WEB=www.tse.or.jp
market # 147
    MIC = XTKS
    TimeZone = Asia/Tokyo
    Country = JP
    NbMaxInstruments = 2000000
```

Caution The data disseminated via Nagoya Stock Exchange (XNGO) is not available by default.

To include XNGO data and enrich the content of the TSE market data stream, please contact your FeedOS project manager.

1.1.2. Branches

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

```
BRANCHES
    { XFKA CS         ESXXXX } qty: 118
    { XFKA NONE EXXXXX } qty: 2
    { XSAP CS         ESXXXX } qty: 61
    { XSAP NONE EXXXXX } qty: 1
    { XTKS CB         DCXXXX } qty: 92
    { XTKS CS         ESXXXA } qty: 48
    { XTKS CS         ESXXXX } qty: 14164
    { XTKS INDEX TIXXXX } qty: 1118
    { XTKS NONE EXXXXX } qty: 1076
    { XTKS PS         EPXXXX } qty: 12
    { XTKS WAR         RWXXXX } qty: 44
```

1.2. Types of Instruments

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

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

1.2.1. Equities

The sample below illustrates the details of an equity:

```
instr # 147/1040849 = 309322193
                                string{JPY}
   PriceCurrency
   Symbol
                                string{4980}
   Description
                                string{ デクセリアルズ }
   SecurityType
                                string{CS}
   FOSMarketId
                                XTKS
   CFICode
                                string{ESXXXX}
   RoundLot
                                float64{100}
                                string{01}
   SecuritySubType
    SecurityGroup
                                string{0111}
   InternalCreationDate
                                Timestamp{2015-07-28 09:15:49:333}
                                Timestamp{2015-07-28 09:15:49:333}
   InternalModificationDate
                                uint16{235}
   InternalSourceId
   InternalAggregationId
                                uint16{235}
   InternalEntitlementId
                                int32{1095}
   LocalCodeStr
                                string{4980.T3}
   ISIN
                                string{JP3548770001}
   OperatingMIC
                                string{XJPX}
   SegmentMIC
                                string{XTK3}
   IndustryCode
                                string{3200}
```

1.2.2. Bonds

The sample below illustrates the details of a bond:

```
instr # 147/1040845 = 309322189
   PriceCurrency
                                string{JPY}
   Symbol 3
                                string{900066758}
   Description
                                string{ソニー6 CB}
   SecurityType
                                string{CB}
   FOSMarketId
                                XTKS
   CFICode
                                string{DCXXXX}
   RoundLot
                                float64{1000000}
   SecuritySubType
                                string{51}
   SecurityGroup
                                string{0211}
                                Timestamp{2015-07-21 09:15:18:925}
   InternalCreationDate
   InternalModificationDate
                                Timestamp{2015-07-21 09:15:18:925}
   InternalSourceId
                                uint16{235}
   InternalAggregationId
                                uint16{235}
   InternalEntitlementId
                                int32{1095}
                                string{900066758.T3}
   LocalCodeStr
                                string{JP343500PF78}
   TSTN
   OperatingMIC
                                string{XJPX}
   SegmentMIC
                                string{XTK3}
   IndustryCode
                                string{3650}
```

1.2.3. Indices

The sample below illustrates the details of a index:

```
instr # 147/1040809 = 309322153
   Description
                                string{INAV C999}
   SecurityType
                                string{INDEX}
   FOSMarketId
                                XTKS
                                string{TIXXXX}
   CFICode
   SecuritySubType
                                string{INDEX}
   InternalCreationDate
                                Timestamp{2015-06-27 10:04:54:142}
   InternalModificationDate
                                Timestamp{2015-06-27 10:04:54:142}
   InternalSourceId
                                uint16{235}
   InternalAggregationId
                                uint16{235}
   InternalEntitlementId
                                int32{1171}
   LocalCodeStr
                                string{IDX_C999}
   OperatingMIC
                                string{XJPX}
```

1.2.4. Warrants

The sample below illustrates the details of a warrant:

```
instr # 147/1039637 = 309320981
   PriceCurrency
                                string{JPY}
   Symbol
                                string{38109}
   Description
                                string{M-サイバー S 23予}
   SecurityType
                                string{WAR}
   FOSMarketId
                               XTKS
   CFICode
                               string{RWXXXX}
   RoundLot
                               float64{100}
   SecurityGroup string{07}
InternalCreationDate Timestame(20)
                            string{07}
                               Timestamp{2015-02-13 09:15:13:499}
   InternalModificationDate
                               Timestamp{2015-04-08 22:45:00:132}
   InternalHideFromLookup
                               bool{True}
   InternalSourceId
                               uint16{235}
   InternalAggregationId
                               uint16{235}
   LocalCodeStr
                               string{38109.T3}
   ISIN
                               string{JP3311520096}
   OperatingMIC
                               string{XJPX}
   SegmentMIC
                                string{XTK3}
   IndustryCode
                                string{5250}
```

2. Quotation Data

The following sections describe the characteristics of the quotation data on the TSE market data stream, in terms of:

- 2.1. Quotation Values
- 2.2. TradingStatus
- 2.3. Specific Quotation Tags
- 2.4. MBL and MBO Data.

2.1. Quotation Values

The examples below shows the possible values of an instrument on the TSE market data stream:

```
InstrumentStatusL1
-- 147/1001000
       BID: 0 0
                        *NO ORDER*
       ASK: 0 0
                       *NO ORDER*
       LastPrice
                                        float64{1633.94}
       DailyHighPrice
                                        float64{1638.11}
       DailyLowPrice
                                        float64{1626.27}
                                        Timestamp{2015-07-29 00:00:00:033}
       InternalDailyOpenTimestamp
        InternalDailyCloseTimestamp
                                        Timestamp{2015-07-29 06:00:03:019}
       InternalDailyHighTimestamp
                                        Timestamp{2015-07-29 00:00:16:090}
       InternalDailyLowTimestamp
                                        Timestamp{2015-07-29 01:12:11:077}
       InternalPriceActivityTimestamp Timestamp{2015-07-29 06:00:03:088}
       TradingStatus
                                        18=NotAvailableForTrading
       TradingSessionId
                                        int8{2}
       SessionTotalOffBookAssetTraded float64{0}
       SessionTotalOffBookVolumeTraded float64{0}
        PriorSessionsTotalAssetTraded float64{0}
        PriorSessionsTotalVolumeTraded float64{0}
        PriorSessionsTotalOffBookAssetTraded
                                                float64{0}
       PriorSessionsTotalOffBookVolumeTraded
                                                float64{0}
        SessionTotalVolumeTraded float64{0}
        SessionOpeningPrice
                                        float64{1631.16}
        PreviousSessionClosingPrice
                                        float64{1627.24}
                                        float64{1636.08}
       SessionHighPrice
                                        float64{1630.26}
       SessionLowPrice
       SessionTotalAssetTraded
                                        float64{0}
        SessionClosingPrice
                                        float64{1634.08}
                                        float64{1637.97}
       DailyOpeningPrice
       DailyClosingPrice
                                        float64{1633.94}
       PreviousDailyClosingPrice
PreviousBusinessDay
                                        float64{1629.46}
                                        Timestamp{2015-07-28}
       CurrentBusinessDay
                                        Timestamp{2015-07-29}
        InternalDailyClosingPriceType
                                       char{d}
        PriceActivityMarketTimestamp
                                        Timestamp{2015-07-29 06:00:03}
       ExchangeLastComputedPrice
                                        float64{1633.94}
       MARKET_TSE_BidMarketOrderVolume Float64{20180}
       MARKET_TSE_AskMarketOrderVolume Float64{21300}
       MARKET_TSE_BidSpecialQuotePrice Float64{1670}
       MARKET_TSE_AskSpecialQuotePrice Float64{1684}
```

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

2.2. TradingStatus

Each time a modification of the trading status occurs, the values of the quotation tag **TradingStatus** conveyed on the TSE 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 TradingStatus is described in the following table:

Table 2 TradingStatus – technical implementation in FeedOS

Component	Value	Description
Tag Name	TradingStatus	FeedOS tag name.
Numeric ID	9100	FeedOS unique ID disseminated on the S&P Capital IQ Real- Time Solutions data stream. This is the numeric equivalent of the tag name.
Туре	Enum	Enum data type.
Format	[Exchange Specific Value]	An exchange specific value , detailing the characteristics of the trading status.
	2	Trading Halt
	5	Price Indication
Possible Values	17	Ready to Trade
	18	Not Available for Trading
	21	Pre-Open

2.3. Specific Quotation Tags

The following sections describe additional, specific quotation tags available on TSE market data stream:

- 2.3.1. Trade Conditions
- 2.3.2. Other Values.

2.3.1. Trade Conditions

The following subsections describe the trade conditions available on the TSE market data stream:

- 2.3.1.1. MARKET_TSE_BidQuoteCondition
- 2.3.1.2. MARKET_TSE_AskQuoteCondition
- 2.3.1.3. MARKET_TSE_TostnetPriceCode
- 2.3.1.4. MARKET_TSE_TostnetTransactionFlag.

2.3.1.1. MARKET_TSE_BidQuoteCondition

Each time an execution occurs, the values of the quotation context tag **MARKET_TSE_BidQuoteCondition** conveyed on the TSE market data stream are disseminated via FeedOS data stream in *Context* to detail the quote condition on the bid side:

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

FeedOS implementation of the tag MARKET_TSE_BidQuoteCondition is described in the table below:

Table 3 MARKET_TSE_BidQuoteCondition – technical implementation in FeedOS

Component	Value	Description
Tag Name	MARKET_TSE_BidQuoteCondition	FeedOS tag name.
Numeric ID	16390	FeedOS unique ID broadcast on the S&P Capital IQ Real-Time Solutions data stream. It is the numeric equivalent of the tag name.
Туре	Char	Char data type.
Format	[Exchange Specific Value]	An exchange specific value , detailing the quote condition on the bid side.
	0	Quote before Opening
	1	General Quote
Possible Values	3	Special Quote
Possible values	4	Continuous Execution Quote
	7	Special Quote before Trading Halt
	8	Continuous Execution Quote before Trading Halt

2.3.1.2. MARKET_TSE_AskQuoteCondition

Each time an execution occurs, the values of the quotation context tag **MARKET_TSE_AskQuoteCondition** conveyed on the TSE market data stream are disseminated via FeedOS data stream in *Context* to detail the quote condition on the ask side:

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

FeedOS implementation of the tag MARKET_TSE_AskQuoteCondition is described in the table below:

Table 4 MARKET_TSE_AskQuoteCondition – technical implementation in FeedOS

Component	Value	Description
Tag Name	MARKET_TSE_AskQuoteCondition	FeedOS tag name.
Numeric ID	16391	FeedOS unique ID broadcast on the S&P Capital IQ Real-Time Solutions data stream. It is the numeric equivalent of the tag name.
Туре	Char	Char data type.
Format / Possible Values	[Exchange Specific Value]	An exchange specific value , detailing the quote condition on the ask side.
	0	Quote before Opening
	1	General Quote
Possible Values	3	Special Quote
rossible values	4	Continuous Execution Quote
	7	Special Quote before Trading Halt
	8	Continuous Execution Quote before Trading Halt

2.3.1.3. MARKET_TSE_TostnetPriceCode

Each time an execution occurs, the values of the quotation context tag **MARKET_TSE_TostnetPriceCode** conveyed on the TSE market data stream are disseminated via FeedOS data stream in *Context* to detail the code of the Tostnet price:

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

FeedOS implementation of tag MARKET_TSE_TostnetPriceCode is described in the table below:

Table 5 MARKET_TSE_TostnetPriceCode – technical implementation in FeedOS

Component	Value	Description
Tag Name	MARKET_TSE_TostnetPriceCode	FeedOS tag name.
Numeric ID	16392	FeedOS unique ID broadcast on the S&P Capital IQ Real-Time Solutions data stream. It is the numeric equivalent of the tag name.
Туре	UInt8	UInt8 data type.
Format	[Exchange Specific Value]	An exchange specific value , detailing the code of the Tostnet Price.
	<empty></empty>	Default value, not sent.
	01	Previous-day closing price
	05	Previous-day VWAP
Possible Values	11	Morning-session closing price
Possible values	15	Morning-session VWAP
	31	Today's closing price
	25	Afternoon-session VWAP
	35	All-day VWAP

2.3.1.4. MARKET_TSE_TostnetTransactionFlag

Each time an execution occurs, the values of the quotation context tag **MARKET_TSE_TostnetTransactionFlag** conveyed on the TSE market data stream are disseminated via FeedOS data stream in *Context* to identify the flag of the Tostnet transaction:

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

FeedOS implementation of the tag MARKET_TSE_TostnetTransactionFlag is described in the table below:

Table 6 MARKET_TSE_TostnetTransactionFlag – technical implementation in FeedOS

Component	Value	Description
Tag Name	MARKET_TSE_TostnetTransactionFlag	FeedOS tag name.
Numeric ID	16393	FeedOS unique ID broadcast on the S&P Capital IQ Real-Time Solutions data stream. It is the numeric equivalent of the tag name.
Туре	Char	Char data type.
Format	[Exchange Specific Value]	An exchange specific value , identifying the flag of the Tostnet transaction.

Table 6 MARKET_TSE_TostnetTransactionFlag – technical implementation in FeedOS (Continued)

Component	Value	Description
Possible Values	<empty></empty>	Ordinary transaction – default value, not sent.
	1	Day transaction
	2	Ordinary transaction (VWAP transaction)
	3	Day transaction (VWAP transaction)

2.3.2. Other Values

The following subsections describe the other values available on the TSE market data stream:

- 2.3.2.1. RegSHOAction
- 2.3.2.2. InternalDailyClosingPriceType
- 2.3.2.3. ExchangeLastComputedPrice
- 2.3.2.4. MARKET_TSE_BidMarketOrderVolume
- 2.3.2.5. MARKET_TSE_AskMarketOrderVolume
- 2.3.2.6. MARKET_TSE_BidSpecialQuotePrice
- 2.3.2.7. MARKET_TSE_AskSpecialQuotePrice.

2.3.2.1. RegSHOAction

Each time a short sale price restriction occurs, the values of the quotation tag **RegSHOAction** conveyed on the TSE 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 RegSHOAction is described in the following table:

Table 7 RegSHOAction – technical implementation in FeedOS

Component	Value	Description
Tag Name	RegSHOAction	FeedOS tag name.
Numeric ID	9113	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Туре	Enum	Enum data type.
Format	[Exchange Specific Value]	An exchange specific value , detailing the short sale restriction status.
Possible	FOSRegSHOAction_NoPriceTest	Short Selling Regulation Does Not Apply (Exchange's Short Selling Regulation = 0)
Values	FOSRegSHOAction_PriceTestInEffect	Short Selling Regulation Is Effective (Exchange's Short Selling Regulation = 1)

2.3.2.2. InternalDailyClosingPriceType

The values of the quotation tag **InternalDailyClosingPriceType** conveyed on the TSE 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 Levell 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 8 Internal Daily Closing Price Type – technical implementation in FeedOS

Component	Value	Description
Tag Name	InternalDailyClosingPriceType	FeedOS tag name.
Numeric ID	9155	FeedOS unique ID disseminated on the S&P Capital IQ Real- Time Solutions data stream. This is the numeric equivalent of the tag name.
Туре	Char	Char data type.
Format	[Internal Specific Value]	An <i>internal specific value</i> , detailing the type of daily closing price, as described below.
	0	Undefined
Possible Values	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.
	с	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).
	е	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).

2.3.2.3. ExchangeLastComputedPrice

The values of the quotation tag **ExchangeLastComputedPrice** conveyed on the TSE market data stream are disseminated via FeedOS data stream in *Other Values* to indicate the last computed price sent by the exchange:

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

The ExchangeLastComputedPrice is available only for certain indices that are eligible for the High Speed Index (during the Continuous Trading phases of the TOPIX / TOPIX Core30 and TOPIX 500).

FeedOS implementation of the tag ExchangeLastComputedPrice is described in the table below:

Table 9 ExchangeLastComputedPrice – technical implementation in FeedOS

Component	Value	Description
Tag Name	ExchangeLastComputedPrice	FeedOS tag name.
Numeric ID	9371	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Туре	Float64	Float64 data type.
Format / Possible Values	[Exchange Specific Value]	An exchange specific value , indicating the last computed price sent by the exchange.

2.3.2.4. MARKET_TSE_BidMarketOrderVolume

The values of the quotation tag **MARKET_TSE_BidMarketOrderVolume** conveyed on the TSE market data stream are disseminated via FeedOS data stream in *Other Values* to detail the market order volume on the bid side:

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

During the auction phases, the TSE Standard Flex Feed does not provide any Theoretical Opening or Auction Price, especially when Market orders are available. Moreover, the Market orders are the first to be executed.

FeedOS implementation of the tag MARKET_TSE_BidMarketOrderVolume is described in the table below:

Table 10 MARKET_TSE_BidMarketOrderVolume – technical implementation in FeedOS

Component	Value	Description
Tag Name	MARKET_TSE_BidMarketOrderVolume	FeedOS tag name.
Numeric ID	15060	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Туре	Float64	Float64 data type.
Format / Possible Values	[Exchange Specific Value]	An exchange specific value , detailing the market order volume on the bid side.

2.3.2.5. MARKET TSE AskMarketOrderVolume

The values of the quotation tag **MARKET_TSE_AskMarketOrderVolume** conveyed on the TSE market data stream are disseminated via FeedOS data stream in *Other Values* to detail the market order volume on the ask side:

- in the callback carrying the Level1 event notif_TradeEventExt(), for C++
- in the event handler $\mathsf{TradeEventExtEventHandler}$, for $\mathsf{C\#}$
- in the callback carrying the Levell event quotNotifTradeEventExt, for Java.

During the auction phases, the TSE Standard Flex Feed does not provide any Theoretical Opening or Auction Price, especially when Market orders are available. Moreover, the Market orders are the first to be executed.

Following the introduction of the MARKET_TSE_BidMarketOrderVolume and MARKET_TSE_AskMarketOrderVolume tags, the Market Order Prices (Magical Prices) are no longer provided in the L1. Moreover, only these tags disseminate the information describing the volume of market orders. However, the MBL L2 does not change, as the markets orders remain in the first position. Subsequently, the L1 and the first limit of the MBL L2 may differ.

FeedOS implementation of the tag MARKET_TSE_AskMarketOrderVolume is described in the table below:

Table 11 MARKET_TSE_AskMarketOrderVolume – technical implementation in FeedOS

Component	Value	Description				
Tag Name	MARKET_TSE_AskMarketOrderVolume	FeedOS tag name.				
Numeric ID	15061	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.				
Туре	Float64	Float64 data type.				
Format / Possible Values	[Exchange Specific Value]	An exchange specific value , detailing the market order volume on the ask side.				

2.3.2.6. MARKET_TSE_BidSpecialQuotePrice

The values of the quotation tag **MARKET_TSE_BidSpecialQuotePrice** conveyed on the TSE market data stream are disseminated via FeedOS data stream in *Other Values* to detail the special quote price on the bid side:

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

Note

A special quote is indicated whenever prices tend to exceed the special quote renewal price intervals. The purpose of a special quote is to prevent major short-term price fluctuations.

Special quotes can be indicated at any time during the trading session, whether before the opening price has been set or during Zaraba trading, if there is any likelihood of inappropriate price fluctuations, for example as a result of a major order imbalance between bids and offers.

Special offer quotes are indicated when the next price is anticipated to be at a price lower than the given appropriate special quote renewal price interval and special bid quotes are indicated when the next price is anticipated to be at a price higher than the special quote renewal price interval.

FeedOS implementation of the tag MARKET_TSE_BidSpecialQuotePrice is described in the table below:

Table 12 MARKET TSE BidSpecialQuotePrice – technical implementation in FeedOS

Component	Value	Description			
Tag Name	MARKET_TSE_BidSpecialQuotePrice	FeedOS tag name.			
Numeric ID	15062	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.			
Туре	Float64	Float64 data type.			
Format / Possible Values	[Exchange Specific Value]	An exchange specific value , detailing the special quote price on the bid side.			

2.3.2.7. MARKET TSE AskSpecialQuotePrice

The values of the quotation tag MARKET_TSE_AskSpecialQuotePrice conveyed on the TSE market data stream are disseminated via FeedOS data stream in *Other Values* to detail the special quote price on the ask side:

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

• in the callback carrying the Levell event quotNotifTradeEventExt, for Java.

Note A special quote is indicated whenever prices tend to exceed the special quote renewal price intervals. The purpose of a special quote is to prevent major short-term price fluctuations.

Special quotes can be indicated at any time during the trading session, whether before the opening price has been set or during Zaraba trading, if there is any likelihood of inappropriate price fluctuations, for example as a result of a major order imbalance between bids and offers.

Special offer quotes are indicated when the next price is anticipated to be at a price lower than the given appropriate special quote renewal price interval and special bid quotes are indicated when the next price is anticipated to be at a price higher than the special quote renewal price interval.

FeedOS implementation of the tag MARKET_TSE_AskSpecialQuotePrice is described in the table below:

Table 13 MARKET_TSE_AskSpecialQuotePrice – technical implementation in FeedOS

Component	Value	Description				
Tag Name	MARKET_TSE_AskSpecialQuotePrice	FeedOS tag name.				
Numeric ID	15063	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.				
Туре	Float64	Float64 data type.				
Format / Possible Values	[Exchange Specific Value]	An exchange specific value , detailing the special quote price on the ask side.				

2.4. MBL and MBO Data*

The MBL book has a 10-level depth and a special limit at the 11th level with a price equal to UNQUOTED. This limit represents the aggregation of all the limits beyond the 10th. There is no MBO.

3. Closing Price

The closing price is the last trade price upon close. There is no settlement price.

4. Multi-Session Kinematics

The following diagram describes the main trading phases and update mechanism on the XTKS market:

^{*} The MBL and MBO 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.

Japan Standard Time 08:30 PREOPEN PreOpen Phase CurrentBusinessDay = last trading day date **Daily Opening Signal** 09:00 4P message with the Open Price OPEN • TradingSessionId = 1 • RESET DailyOpeningPrice • RESET DailyClosingPrice • RESET DailyTotalVolumeTraded • RESET SessionTotalAssetTraded • RESET SessionClosingPrice • PreviousDailyClosingPrice = DailyClosingPrice • SessionOpeningPrice • CurrentBusinessDay = business day • PreviousDailyTotalVolumeTraded = DailyTotalVolumeTraded Crontab to open the instrument 09:01 without a 4P message **SessionClosingPrice** 11:30 4P message with the Closing Price Crontab to close the instrument 11:31 without a 4P message 12:00 PreOpen Phase Trading Session ID +1 (=2) 12:30 **OPEN** • SessionOpeningPrice Afternoon • RESET SessionClosingPrice Session • RESET SessionOpeningPrice 12:31 Crontab to open the instrument without a 4P message **Daily Closing Signal** 15:00 **CLOSE** Closing Phase DailyClosingPrice DailyTotalVolumeTraded SessionClosingPrice 15:01 Crontab to close the instrument without a 4P message

Figure 1 Example of tags update mechanism on the XTKS market during a trading day

For more details about the update mechanism of the fields and tags, and their possible values, see also FeedOS Quotation Tags Guide.

The Trading Sessions of XTKS, XFKA, XNGO and XSAP markets are described in the following table:

Table 14 Trading Sessions

Market	TSE/Tokyo AIM				NSE/FSE/SSE			
Trading State	Morning Session		Afternoon Session		Morning Session		Afternoon Session	
Trading State	Begin Hour	End Hour	Begin Hour	End Hour	Begin Hour	End Hour	Begin Hour	End Hour
PreOpen (place order only)	08:00:00	09:00:00	12:05:00	12:30:00	08:00:00	09:00:00	12:05:00	12:30:00
Continuous Trading	09:00:00	11:30:00	12:30:00	15:00:00	09:00:00	11:30:00	12:30:00	15:30:00

5. Special Behavior

The following section describe the special behavior of the TSE market data stream:

- 5.1. Level1 Market Data Kinematics OPEN
- 5.2. Daily Prices Management
- 5.3. Market Order Prices
- 5.4. ToSTNeT Instrument Reporting
- 5.5. Microsecond Timestamp Precision on the Level1 Market Data.

5.1. Level1 Market Data Kinematics - OPEN

In the Level1 Market Data Kinematics **before 2015-06-29**, at 00:00 UTC Time, the exchange sent the OPEN signal and the Trading Status was set to 17=ReadyToTrade, as shown in the example below:

```
"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"
               00:00:00:085.762
                                                                          309284167
                                                                                                                                                                        194100
ΤE
                                                                                                                                               2231
{\tt MARKET\_TSE\_BidQuoteCondition=char\{0\}, MARKET\_TSE\_AskQuoteCondition=char\{0\}, MARKET\_TSE\_AskQuoteConditio
               00:00:00:085.762 309284167 MARKET_TSE_BidMarketOrderVolume=99300
                                                                                                                * *
               00:00:00:097.252
                                                                          309284167
                                                                                                                                              2231
                                                                                                                                                                       194800
                                                                                                                                                                                                                                      194100
MARKET_TSE_BidQuoteCondition=char{0}, MARKET_TSE_AskQuoteCondition=char{0}
              00:00:00:103.731 309284167 OPEN
SI
               00:00:00:103.731
                                                                          309284167
               00:00:00:103.731
                                                                          309284167
                                                                                                               TradingSessionId=1
                                                                                                                                                                                   TradingStatus=17
               00:00:00:139.616
                                                                          309284167
                                                                                                                * * * *
MARKET_TSE_BidQuoteCondition=char{0}, MARKET_TSE_AskQuoteCondition=char{0}
               00:00:00:139.616
                                                                          309284167
                                                                                                                MARKET_TSE_BidSpecialQuotePrice=?
MARKET_TSE_AskSpecialQuotePrice=?
               00:00:00:142.454
                                                                           309284167
                                                                                                                               *
                                                                                                                                               2231
                                                                                                                                                                        195000
MARKET_TSE_BidQuoteCondition=char{0}, MARKET_TSE_AskQuoteCondition=char{0}
```

In the Level1 Market Data Kinematics **after 2015-06-29**, the first trade will trigger the OPEN signal and set the Trading Status to 17=ReadyToTrade, as shown in the example below:

```
"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"
                00:00:00:085.762
                                                                           309284167
                                                                                                                                                 2231
                                                                                                                                                                          194100
MARKET_TSE_BidQuoteCondition=char{0}, MARKET_TSE_AskQuoteCondition=char{0}
VU
                00:00:00:085.762
                                                                           309284167
                                                                                                                  MARKET_TSE_BidMarketOrderVolume=99300
                                                                                                                                *
                00:00:00:097.252
                                                                           309284167
                                                                                                                                                 2231
                                                                                                                                                                          194800
                                                                                                                                                                                                          2231.5
                                                                                                                                                                                                                                         194100
MARKET_TSE_BidQuoteCondition=char{0}, MARKET_TSE_AskQuoteCondition=char{0}
                                                                                                                           *
                                                                                                                                                *
                                                                                                                                                              *
                                                                                                                                                                                *
                00:00:00:139.616
                                                                           309284167
                                                                                                                *
MARKET_TSE_BidQuoteCondition=char{0}, MARKET_TSE_AskQuoteCondition=char{0}
                00:00:00:139.616
                                                                           309284167
                                                                                                                 MARKET_TSE_BidSpecialQuotePrice=?
MARKET_TSE_AskSpecialQuotePrice=?
                                                                                                                                                                          195000
                00:00:00:142.454
                                                                           309284167
                                                                                                                                                 2231
MARKET_TSE_BidQuoteCondition=char{0}, MARKET_TSE_AskQuoteCondition=char{0}
                                                                                                               *
                                                                                                                           *
                00:00:00:148.938
                                                                                                                                                 2231
                                                                           309284167
                                                                                                                                                                          194800
MARKET_TSE_BidQuoteCondition=char{0}, MARKET_TSE_AskQuoteCondition=char{0}
                                                                                                             * *
                                                                                                                                               *
                00:00:00:156.298
                                                                           309284167
                                                                                                                                                                                2231.5
                                                                                                                                                                                                                194300
{\tt MARKET\_TSE\_BidQuoteCondition=char\{0\}, MARKET\_TSE\_AskQuoteCondition=char\{0\}, MARKET\_TSE\_AskQuoteConditio
                                                                                                             *
                                                                                                                           *
                                                                                                                                                                          195000
                00:00:00:159.193
                                                                           309284167
                                                                                                                                                 2231
TF
{\tt MARKET\_TSE\_BidQuoteCondition=char\{0\}, MARKET\_TSE\_AskQuoteCondition=char\{0\}, MARKET\_TSE\_AskQuoteCondition=char[0], MARKET\_TSE\_AskQuoteConditio
VU
                00:00:00:159.193
                                                                           309284167
                                                                                                                MARKET_TSE_BidMarketOrderVolume=99500
MARKET_TSE_AskMarketOrderVolume=145000
                00:00:00:163.046
                                                                           309284167
                                                                                                                                                                          194300
                                                                                                                                                                                                                                   194300
TF
                                                                                                                                                 2231
                                                                                                                                                                                                          2231
MARKET_TSE_BidQuoteCondition=char{0}, MARKET_TSE_AskQuoteCondition=char{0}
                                                                           309284167 *
TF
                00:00:00:168.221
                                                                                                                                                 2231
                                                                                                                                                                          195000
                                                                                                                                                                                                          2231.5
                                                                                                                                                                                                                                         194300
MARKET_TSE_BidQuoteCondition=char{0}, MARKET_TSE_AskQuoteCondition=char{0}
                                                                                                                               *
                                                                                                                                                                          195300
TF
                00:00:00:238.518
                                                                           309284167
                                                                                                                                                 2231
MARKET_TSE_BidQuoteCondition=char{0}, MARKET_TSE_AskQuoteCondition=char{0}
                                                                                                                 MARKET_TSE_BidMarketOrderVolume=99800
VU
               00:00:00:238.518
                                                                           309284167
                00:00:12:103.731
                                                                            309284167
SI
ΤE
                00:00:12:103.731
                                                                            309284167
                                                                                                                                                                                                                O
VU
                00:00:12:103.731
                                                                            309284167
                                                                                                                 TradingSessionId=1
                                                                                                                                                                                      TradingStatus=17
                00:00:12:103.731
TF
                                                                           309284167
                                                                                                                 2231
                                                                                                                                           194300
TradeCondition=E=opening_reopening_trade_detail
```

5.2. Daily Prices Management

TSE market data stream does not manage High Speed Index prices. Moreover, the Daily High and Daily Low prices may be wrong after the opening of the afternoon session. However, the Session High and Session Low prices are always correct.

5.3. Market Order Prices

Following the introduction of the MARKET_TSE_BidMarketOrderVolume and MARKET_TSE_AskMarketOrderVolume tags, the Market Order Prices (AT_BEST Prices) are no longer provided in the Level1 Market Data, as shown in the example below.

Moreover, only these two tags disseminate the information describing the volume of market orders. However, the MBL Level2 does not change, as the markets orders remain in the first position. Subsequently, the Level1 and the first limit of the MBL Level2 may differ.

```
Level1 Market Data before 2014-04-28
Bid Qty Bid Price Ask Price Ask Qty
       AT_BEST AT_BEST 500
Level2 Market Data before 2014-04-28
Bid Qty Bid Price
                 Ask Price Ask Qty
       AT_BEST AT_BEST 500
1000
200
       920
                  922
                            300
Level1 Market Data after 2014-04-28
BidMarketOrderVolume Bid Qty Bid Price Ask Price Ask Qty AskMarketOrderVolume
1000
                                        922
                                                 300
                               920
Level2 Market Data after 2014-04-28
Bid Qty Bid Price Ask Price Ask Qty
       AT_BEST AT_BEST 500
1000
200
       920
                  922
                           300
```

5.4. ToSTNeT Instrument Reporting

Tokyo Stock Exchange Trading NeTwork (ToSTNeT) trades are managed on dedicated instruments as follows:

- Single Stock and Basket Trades belonging to ToSTNeT-1 are reported on instruments suffixed with .T1 from 08:20 to 17:30 (Japan Local Time)
- Closing Price Trading belonging to ToSTNeT-2 is reported on instruments suffixed with .T2 from 08:20 to 17:30 (Japan Local Time)
- Off-Auction Own Share Repurchase Trades belonging to ToSTNeT-3 are reported on instruments suffixed with .T3 from 08:00 to 08:45 (Japan Local Time) and on every auction during the trading day.

However, S&P Capital IQ Real-Time Solutions has configured the opening and closing of ToSTNeT instruments to include the final reporting of trades as detailed below:

- ToSTNeT-1 between 08:15 and 18:00 (Japan Local Time)
- ToSTNeT-2 between 08:15 and 18:00 (Japan Local Time)
- ToSTNeT-3 between 07:55 and 18:00 (Japan Local Time).

The sample below shows the specific referential data of a ToSTNeT instrument:

```
instr # 147/1011828 = 309293172
    PriceCurrency
                                      string{JPY}
    Symbol
                                     string{8648}
    SecurityType
                                   string{CS}
    FOSMarketId
                                   XTKS
    CFICode string{ESXXXA}
RoundLot float64{10}
SecuritySubType string{11}
SecurityGroup string{0113}
InternalCreationDate Timestamp{2013-10-22 22:38:12:22
    Internal SourceId uint16{40}
Local CodeStr string{8648.T1}
MBLLayersDesc string{0}
OperatingMIC string{XTKS}
                                     string{XTK1}
    SegmentMIC
    IndustryCode
                                     string{7050}
```

5.5. Microsecond Timestamp Precision on the Level1 Market Data

The server timestamps display microsecond units on the Level1 Market Data, as shown in the example below (highlighted in green):

```
"TE (TradeEvent) : MARKET_TIME INSTRUMENT LAST_PRICE TRADE_QTY BID_PRICE BID_QTY ASK_PRICE ASK_QTY *CONTENT_MASK* *FLAGS*"

TE 19:55:07:508.521 309284167 * * * * 41.27 700@2
TE 20:00:48:238.168 309284167 * * * * 47.22 100@1
TE 20:00:48:240.254 309284167 * * * * 48.31 100@1
```

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.