S&P CAPITAL IQ
McGRAW HILL FINANCIAL

S&P Capital IQ Real-Time Solutions

FeedOS™ Developer's Notice

CHIX CANADA – Feed Update

Reference n°: 20150804 – 22829 – 27328 – 28168

Standard FH, effective as of: 07 September 2015*

Action required from users: MANDATORY ACTION

*For the actual day when the changes to your custom feed handler take effect, please contact your FeedOS project manager.

S&P Capital IQ Real-Time Solutions
FeedOS™ Developer's Notice: CHIX CANADA – Feed Update
Reference 20150804 – 22829 – 27328 – 28168
August 11, 2015

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UPDATE OF THE CHIX CANADA MARKET DATA STREAM

To reflect the changes caused by the addition of Chi-X Market-On-Close (MOC) order type on the CHIX CANADA market data stream, S&P Capital IQ Real-Time Solutions has decided to enhance the content of FeedOS.

This developer's notice contains late-breaking information about the implementation of this modification in your applications, which may not be included otherwise in the published documentation. The topics this notice covers include:

1. Update Summary

Table 1 Current update summary

Notice Reference	20150804 – 22829 – 27328 – 28168
Exchanges	CHIX CANADA
Concerned MICs	CHIC
Internal Source ID	243
Effective Date	**2015-09-07***
Impact	• Update of the Quotation Tags • Update of the Quotation Context Tags • Update of the Level1 Market Data Kinematics
Action required	**MANDATORY ACTION** - see sections: • 2.5. Update of the Level1 Market Data Kinematics – CLOSE and TradingStatus.

2. FeedOS Technical Implementation

Effective Monday, **September 07* 2015,** S&P Capital IQ Real-Time Solutions enhances the quotation data and updates the Level1 Market Data Kinematics to accommodate the information disseminated on the CHIX CANADA market data stream, as described below:

* This is the proposed day for the update of the standard version of the feed handler. For dedicated feed handlers, the date and Source IDs may differ. For the actual day when the changes to your custom feed handler will take effect, please contact your FeedOS™ project manager.

2.1. Changes to the Quotation Data

S&P Capital IQ Real-Time Solutions **introduces** the quotation tags below to accommodate the information disseminated on the CHIX CANADA market data stream:

Table 2 Quotation tags added on the CHIX CANADA market data stream

Tag Name	Numeric ID	Type
`InternalDailyClosingPriceType`	9155	Char

2.1.1. InternalDailyClosingPriceType

The values of the quotation tag **InternalDailyClosingPriceType** conveyed on the CHIX CANADA 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 disseminated as of 2015-09-07 are highlighted in `green`):

Table 3 InternalDailyClosingPriceType – 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.
Type	`Char`	Char data type.
Format	*`[Internal Specific Value]`*	An ***internal specific value***, detailing the type of daily closing price, as described below.

Table 3 InternalDailyClosingPriceType – technical implementation in FeedOS (Continued)

Component	Value	Description
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).

Quotation Data Sample

Below is an example showing the current implementation of the newly added (in green) quotation tags:

```
InstrumentStatusL1
-- 472/2638
        BID: 36.06      500     @2
        ASK: 36.25      200     @1
        LastPrice                       float64{36.27}
        LastTradeQty                    float64{100}
        DailyHighPrice                  float64{36.36}
        DailyLowPrice                   float64{35.86}
        DailyTotalVolumeTraded          float64{4500}
        DailyTotalAssetTraded           float64{162608.5}
        LastTradePrice                  float64{36.27}
        LastTradeTimestamp              Timestamp{2015-08-04 13:30:44:794}
        InternalDailyOpenTimestamp      Timestamp{2015-08-04 12:29:59:999}
        InternalDailyCloseTimestamp     Timestamp{2015-07-31 21:00:00}
        InternalDailyHighTimestamp      Timestamp{2015-08-04 13:30:03:463}
        InternalDailyLowTimestamp       Timestamp{2015-08-04 13:30:01:592}
        InternalPriceActivityTimestamp  Timestamp{2015-08-04 13:30:53:978}
        TradingStatus                   17=ReadyToTrade
        DailyOpeningPrice               float64{35.86}
        PreviousDailyTotalVolumeTraded  float64{973214}
        PreviousDailyTotalAssetTraded   float64{35707105.58}
        PreviousDailyClosingPrice       float64{36.7118}
        PreviousBusinessDay             Timestamp{2015-07-31}
        CurrentBusinessDay              Timestamp{2015-08-04}
        InternalDailyClosingPriceType   char{d}
        PriceActivityMarketTimestamp    Timestamp{2015-08-04 13:30:53:979}
```

2.2. Changes to the Quotation Context Data

S&P Capital IQ Real-Time Solutions **introduces** the quotation context tags below to accommodate the information disseminated on the CHIX CANADA market data stream:

Table 4 Quotation context tags added on the CHIX CANADA market data stream

Tag Name	Numeric ID	Type
`Buyer`	288	String
`Seller`	289	String

Moreover, S&P Capital IQ Real-Time Solutions **updates** the quotation context tags below:

Table 5 Quotation context tags added on the CHIX CANADA market data stream

Tag Name	Numeric ID	Type
`TradeCondition`	277	String

2.3. Buyer

Each time a trade occurs, the values of the quotation context tag **Buyer** conveyed on the CHIX CANADA market data stream are disseminated via FeedOS data stream in *Context* to identify the buyer side:

- 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 `Buyer` is described in the table below:

Table 6 Buyer – technical implementation in FeedOS

Component	Value	Description
Tag Name	`Buyer`	FeedOS tag name.
Numeric ID	`288`	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 / Possible Values	*`[Exchange Specific Value]`*	An ***exchange specific value***, detailing the value on the buyer side. **Note:** The Broker is always set to 001 (Anonymous) for Chi-X only.

2.4. Seller

Each time a trade occurs, the values of the quotation context tag **Seller** conveyed on the CHIX CANADA market data stream are disseminated via FeedOS data stream in *Context* to identify the seller side:

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

Table 7 Seller – technical implementation in FeedOS

Component	Value	Description
Tag Name	`Seller`	FeedOS tag name.
Numeric ID	`289`	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 / Possible Values	*`[Exchange Specific Value]`*	An ***exchange specific value***, detailing the value on the seller side. **Note:** The Broker is always set to 001 (Anonymous) for Chi-X only.

2.4.1. TradeCondition

Each time a trade occurs, the values of the quotation context tag **TradeCondition** conveyed on the CHIX CANADA market data stream are disseminated via FeedOS data stream in *Context*:

- 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 `TradeCondition` is described in the table below:

Table 8 TradeCondition – technical implementation in FeedOS

Component	Value	Description
Tag Name	`TradeCondition`	FeedOS tag name.
Numeric ID	`277`	FeedOS unique ID broadcast 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***, detailing the conditions of a trade.
Possible Values	`AJ`	Official Closing Price **Note:** This value also applies to MOC trades.

Quotation Context Data Sample

Below is an example showing the current implementation of the newly added (in green) and updated (in blue) quotation context tags:

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

TE   19:59:14:860.739   989857470    10.48   400    *    *     10.48   300@2
Buyer=002, Seller=002
TE   19:59:14:860.768   989857470    10.48   100    *    *     10.48   200@1
Buyer=002
TE   19:59:14:860.795   989857470    10.48   200    *    *     10.49   1100@7
Buyer=002, Seller=011

[...]

TE   19:50:41:918.048   989857470    13.79    291     *    *    *    *     L
TradeCondition=AJ=official_closing_price, TradeID=130000170
TE   20:10:33:257.166   989857470    16.53   400     *    *    *    *     H
TradeCondition=AJ=official_closing_price, TradeID=130000119
TE   20:10:33:258.799   989857470    16.53   600     *    *    *    *
TradeCondition=AJ=official_closing_price, TradeID=130000122
TE   20:13:06:432.525   989857470    16.53   1231    *    *    *    *
TradeCondition=AJ=official_closing_price, TradeID=130003492
```

2.5. Update of the Level1 Market Data Kinematics – CLOSE and TradingStatus

In the Level1 Market Data Kinematics **before 2015-09-07**, at 21:00:00 UTC, the exchange sends the CLOSE signal and the `TradingStatus` is set to `18=NotAvailableForTrading`, 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"

TE   20:48:48:804   989858382    *    *    34.75    200@2    *    *
TE   20:59:03:584   989858382    *    *    34.75    100@1    *    *
TE   20:59:03:588   989858382    *    *    *    *    34.87    2400@2
SI   21:00:00:000   989858382    CLOSE    35.13
TE   21:00:00:000   989858382    35.13    *    *    *    *    *    C
VU   21:00:00:000   989858382    TradingStatus=18
TE   21:00:06:543   989858382    *    *    *    *    34.87    1200@1
TE   21:00:06:549   989858382    *    *    *    *    35    100@1
TE   21:00:06:553   989858382    *    *    *    *    35.09    500@1
TE   21:00:06:553   989858382    *    *    *    *    36.08    100@1
TE   21:00:06:553   989858382    *    *    34.56    200@1    *    *
TE   21:00:06:553   989858382    *    *    34.55    100@1    *    *
TE   21:00:06:633   989858382    *    *    !    0    *    *
TE   21:00:06:673   989858382    *    *    *    *    !    0
TE   23:00:00:583   989858382    *    *    !    0    !    0
```

In the Level1 Market Data Kinematics **after 2015-09-07**, at 21:00:00 UTC, the exchange will send the CLOSE signal, the `TradingStatus` will be set to `15=NewPriceIndication` and the `InternalDailyClosingPriceType` set to `d=LastPrice`, accepting post-trade orders. One hour later, at 22:00:00 UTC, the `TradingStatus` will be set to `18=NotAvailableForTrading`, 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"

TE   20:48:48:804   989858382    *    *    34.75    200@2    *    *
TE   20:59:03:584   989858382    *    *    34.75    100@1    *    *
TE   20:59:03:588   989858382    *    *    *    *    34.87    2400@2
SI   21:00:00:000   989858382    CLOSE    35.13
TE   21:00:00:000   989858382    35.13    *    *    *    *    *    C
VU   21:00:00:000   989858382    InternalDailyClosingPriceType=d    TradingStatus=15
TE   21:00:06:543   989858382    *    *    *    *    34.87    1200@1
TE   21:00:06:549   989858382    *    *    *    *    35    100@1
TE   21:00:06:553   989858382    *    *    *    *    35.09    500@1
TE   21:00:06:553   989858382    *    *    *    *    36.08    100@1
TE   21:00:06:553   989858382    *    *    34.56    200@1    *    *
TE   21:00:06:553   989858382    *    *    34.55    100@1    *    *
VU   22:00:00:000   989858382    TradingStatus=18
```

2.6. Microsecond Timestamp Precision on the Level1 Market Data

Effective **2015-09-07**, the server timestamps will 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   18:12:22:962.842    989857470   15.32   750   *    *    *    *
```

3. Finding the Latest Information

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

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