



S&P Capital IQ Real-Time Solutions

FeedOS™ Feed Description

CHIX CANADA

Reference n°: 20150812 – 22829 – 27328 – 28169

S&P Capital IQ Real-Time Solutions
FeedOS™ Feed Description: CHIX CANADA
Reference 20150812 – 22829 – 27328 – 28169
August 11, 2015

France

52 Rue de la Victoire
75009 Paris
France
Tel: +33 (0) 1 73 02 32 11

United States

55 Water Street, 44th floor
New York, NY 10041
United States of America
Tel: +1-(212)-438-4346

130 East Randolph
One Prudential Plaza, Suite 2900
Chicago, IL 60601
United States of America
Tel: +1-(312)-233-7129

United Kingdom

20 Canada Square
Canary Wharf
London E14 5LH
United Kingdom
Tel: +44 (0) 203 107 1676

Singapore

12 Marina Boulevard
#23-01 Marina Bay
Financial Centre Tower 3
Singapore 018982
Tel: +65 6530 6546

www.spcapitaliq.com

Copyright © 2015 by Standard & Poor's Financial Services LLC, a part of McGraw Hill Financial.

All rights reserved. S&P CAPITAL IQ is a trademark of Standard & Poor's Financial Services LLC. STANDARD & POOR'S, S&P, GLOBAL CREDIT PORTAL and RATINGSDIRECT are registered trademarks of Standard & Poor's Financial Services LLC.

No content (including ratings, credit-related analyses and data, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of Standard & Poor's Financial Services LLC or its affiliates (collectively, S&P). The Content shall not be used for any unlawful or unauthorized purposes. S&P and any third-party providers, as well as their directors, officers, shareholders, employees or agents (collectively S&P Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Parties are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, for the results obtained from the use of the Content, or for the security or maintenance of any data input by the user. The Content is provided on an "as is" basis. S&P PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related and other analyses, including ratings, and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact or recommendations to purchase, hold, or sell any securities or to make any investment decisions. S&P assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P's opinions and analyses do not address the suitability of any security. S&P does not act as a fiduciary or an investment advisor except where registered as such. While S&P has obtained information from sources it believes to be reliable, S&P does not perform an audit and undertakes no duty of due diligence or independent verification of any information it receives.

S&P keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P may have information that is not available to other S&P business units. S&P has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

TABLE OF CONTENTS

FeedOS™ CHIX CANADA Feed Description	1
1. Referential Data	1
1.1. Available Markets and Branches	1
1.1.1. Markets	1
1.1.2. Branches	2
1.2. Types of Instruments	2
1.2.1. Equities	2
2. Quotation Data	2
2.1. Quotation Values	3
2.2. TradingStatus	3
2.3. Specific Quotation Tags	4
2.3.1. Trade Conditions	4
2.3.1.1. TradeCondition	4
2.3.1.2. Buyer	5
2.3.1.3. Seller	5
2.3.2. Other Values	6
2.3.2.1. InternalDailyClosingPriceType	6
2.4. MBL and MBO Data	7
3. Closing Price	7
4. Special Behavior	7
4.1. Level1 Market Data Kinematics – CLOSE and TradingStatus	8
4.2. Microsecond Timestamp Precision on the Level1 Market Data	9
5. Finding the Latest Information	9



FEEDOS™ CHIX CANADA 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 the CHIX CANADA 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. Special Behavior](#)
- [5. Finding the Latest Information.](#)

1. Referential Data

The following sections describe the characteristics of the referential data on the CHIX CANADA 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 CHIX CANADA market data stream.

1.1.1. Markets

The CHIX CANADA market data stream disseminates informations about the following markets:

Table 1 Markets available on the CHIX CANADA market data stream

FeedOS Market ID	Market
CHIC	CHI-X Canada

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

```
MARKETS
market # 472      CC=CA/CANADA/TORONTO,DESCR=CHI-X CANADA ATS, WEB=www.chi-xcanada.com
MIC = CHIC
TimeZone = America/Toronto
Country = CA
NbMaxInstruments = 2000000
```

1.1.2. Branches

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

```
BRANCHES
{ CHIC CS   EXXXXX } qty: 6222
```

1.2. Types of Instruments

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

1.2.1. Equities

The sample below illustrates the details of an equity:

```
instr # 472/7069 = 989862813
PriceCurrency      string{CAD}
Symbol             string{EFN.DB.A}
SecurityType        string{CS}
FOSMarketId         CHIC
CFICode             string{EXXXXX}
InternalCreationDate Timestamp{2015-05-29 11:00:00:283}
InternalModificationDate Timestamp{2015-05-29 11:00:00:283}
InternalSourceId     uint16{148}
LocalCodeStr         string{XTSE_EFN.DB.A}
ForeignFOSMarketId   XTSE
ForeignMarketId      string{XTSE}
OperatingMIC         string{CHIC}
```

2. Quotation Data

The following sections describe the characteristics of the quotation data on the CHIX CANADA 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 example below shows the possible values of an instrument on the CHIX CANADA market data stream:

```
InstrumentStatusL1
-- 472/7069
    BID: 107.75      0      *NO ORDER*
    ASK: 105.95      0      *NO ORDER*
    LastPrice                float64{110.6}
    LastTradeQty              float64{455000}
    DailyTotalVolumeTraded    float64{0}
    DailyTotalAssetTraded     float64{0}
    LastTradePrice            float64{110.6}
    LastTradeTimestamp         Timestamp{2015-08-10 16:47:00:165}
    InternalDailyOpenTimestamp Timestamp{2015-08-11 12:29:59:998}
    InternalDailyCloseTimestamp Timestamp{2015-08-10 20:59:59:999}
    InternalDailyHighTimestamp Timestamp{2015-08-10 16:47:00:165}
    InternalDailyLowTimestamp  Timestamp{2015-08-10 16:47:00:165}
    InternalPriceActivityTimestamp Timestamp{2015-08-10 23:00:01:319}
    TradingStatus              17=ReadyToTrade
    PreviousDailyTotalVolumeTraded float64{455000}
    PreviousDailyTotalAssetTraded float64{50323000}
    PreviousDailyClosingPrice    float64{110.6}
    InternalDailyClosingPriceType char{d}
    PreviousBusinessDay          Timestamp{2015-08-10}
    CurrentBusinessDay           Timestamp{2015-08-11}
```

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 CHIX CANADA 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.
Type	Enum	Enum data type.
Format	<i>[Exchange Specific Value]</i>	An exchange specific value , detailing the characteristics of the trading status.
Possible Values	2	Trading Halt
	5	Price Indication
	15	New Price Indication
	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 the CHIX CANADA 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 on the CHIX CANADA market data stream:

- [2.3.1.1. TradeCondition](#)
- [2.3.1.2. Buyer](#)
- [2.3.1.3. Seller.](#)

2.3.1.1. 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 3 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	<i>[Exchange Specific value]</i>	An exchange specific value , detailing the conditions of a trade.
Possible Values	AJ	Official Closing Price Note: This value also applies to MOC trades.

2.3.1.2. 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 4 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	<i>[Exchange Specific value]</i>	An exchange specific value , detailing the value on the buyer side. Note: The Broker is always set to 001 (Anonymous) for Chi-X only.

2.3.1.3. 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 `se11er` is described in the table below:

Table 5 Seller – technical implementation in FeedOS

Component	Value	Description
Tag Name	se11er	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	<i>[Exchange Specific value]</i>	An exchange specific value , detailing the value on the seller side. Note: The Broker is always set to 001 (Anonymous) for Chi-X only.

2.3.2. Other Values

The following subsections describe the quotation tags available on the CHIX CANADA market data stream:

- [2.3.2.1. InternalDailyClosingPriceType](#).

2.3.2.1. 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 currently disseminated are highlighted in **green**):

Table 6 InternalDailyClosingPriceType – technical implementation in FeedOS

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	<i>[Internal Specific value]</i>	An internal specific value , detailing the type of daily closing price, as described below.

Table 6 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).

2.4. MBL and MBO Data *

The MBL book has a 10-level depth. The MBO book is full depth.

3. Closing Price

The closing price is the last trade price upon close.

4. Special Behavior

The following sections detail the CHIX CANADA market data stream special behavior in terms of:

- [4.1. Level1 Market Data Kinematics – CLOSE and TradingStatus](#)
- [4.2. Microsecond Timestamp Precision on the Level1 Market Data.](#)

* 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.

4.1. Level1 Market Data Kinematics – CLOSE and TradingStatus

In the Level1 Market Data Kinematics **before 2015-09-07**, at 21:00:00 UTC, the exchange sent the CLOSE signal and the TradingStatus was 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 sends the CLOSE signal, the TradingStatus is 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 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  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

```

4.2. 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    *    *    *    *

```

5. 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>.