S&P Capital IQ Real-Time Solutions

QuantFEED® Developer's Notice

ICE – Feed Upgrade

Reference n°: 20140217 – Update 01

Effective as of: 10 March 2014

Action required from users: Mandatory Action

S&P CAPITAL IQ
McGRAW HILL FINANCIAL

S&P Capital IQ Real-Time Solutions (QuantHouse®) – QuantFEED®
QuantFEED® Developer's Notice
Reference 20140217
February 17, 2014

Corporate Headquarters
S&P Capital IQ Real-Time Solutions (QuantHouse®)
52 Rue de la Victoire
75009 Paris
France
Tel: +33 (0) 1 73 02 32 11
Fax: +33 (0) 1 73 02 32 12

UK Office
10 Foster Lane
London EC2V 6HR
United Kingdom
Tel: +44 (0) 203 107 1676

US Offices
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

www.quanthouse.com

UPGRADE OF THE ICE MARKET DATA STREAM

To improve the quality of the ICE market data stream, S&P Capital IQ Real-Time Solutions has decided to enhance the content of QuantFEED®.

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. Upgrade Summary

Table 1 Current upgrade summary

Notice Reference	20140217 – Update 01
Exchanges	ICE
Concerned MICs	ICEU, IFCA, ICUS
Internal Source ID	66, 88, 188
Effective Date	**2014-03-10**
Impact	• Update of the Referential Tags, including LocalCodeStr • Update of the Quotation Tags • New L1 Kinematics • System Priced Leg Trades Management • Microsecond Timestamp Precision on L1
Action required	**Mandatory Action**

* The red bars highlight content that has been added or changed since the previous release of this document.

2. Functional Description

Effective Monday, **March 10, 2014**, S&P Capital IQ Real-Time Solutions updates the values of the referential tags `SecurityType` (**NumericID**: `167`, **Type**: `String`), `CFICode` (**NumericID**: `461`, **Type**: `String`) and `LocalCodeStr` (**NumericID**: `9500`, **Type**: `String`) to accommodate the information disseminated on the ICE market data stream.

S&P Capital IQ Real-Time Solutions also introduces implied order management in MBO and MBL data. Implied orders are now aggregated in the order book.

The new ICE feed handler allows the management of Options and User-Defined Strategies (UDS) on ICE. However, Options and UDSs are not included by default in the ICE market data stream. For more details about your subscription options, please contact S&P Capital IQ Real-Time Solutions.

Furthermore, S&P Capital IQ Real-Time Solutions improves the L1 kinematics by adding Daily Opening/Closing Signals and Settlement Prices, based on the `MarketStateChange` message from the market. Also, all system priced leg trades are now considered "off-book" trades.

Moreover, the `ServerUTCTime` also displays microsecond units on Level 1 data.

3. QuantFEED® Technical Implementation

The following sections describe the technical implementation of the new or updated tags:

3.1. Security Type

The values of the referential tag **Security Type** conveyed on the ICE market data stream are disseminated via QuantFEED® data stream in *Referential* to specify the type of security.

QuantFEED® implementation of the values currently available for the tag `SecurityType` is described in the table below (newly added values are in `green`):

Table 2 SecurityType – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`SecurityType`	QuantFEED® tag name.
Numeric ID	`167`	QuantFEED® unique ID disseminated on 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 type of security.
Possible Values	`NONE`	Unknown Security Type
	`FUT`	Future
	`FORWARD`	Forward
	`INDEX`	Index
	`MLEG`	Multileg
	`OPT`	Option

3.2. CFI Code

The values of the referential tag **CFI Code** conveyed on the ICE market data stream are disseminated via QuantFEED® data stream in *Referential* to specify the standardized identification code of an instrument.

QuantFEED® implementation of the values currently available for the tag `CFICode` is described in the table below (newly added values are in `green`):

Table 3 CFICode – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`CFICode`	QuantFEED® tag name.
Numeric ID	`461`	QuantFEED® unique ID disseminated on 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 standardized identification code of an instrument.
Possible Values	`FCXXXX`	Futures - Commodities Futures
	`FFWXXX`	Futures - Financial Futures - Swaps
	`MMFXXX`	Other Assets - Forwards
	`MRIXXX`	Other - Referential Instruments - Indices
	`MRXXXX`	Other - Referential Instruments
	`MXXXXX`	Other
	`OXXXXX`	Options

The following table summarizes the instrument types available on ICE market data stream:

Table 4 Instruments available on ICE market data stream

Instrument Type	CFI Code	Security Type
Future	FCXXXX	FUT
OTC Swap - Flow	FFWXXX	FUT
OTC Swap - Lots	FFWXXX	FUT
OTC Physical Forwards	MMFXXX	FORWARD
Spreads	MRXXXX	MLEG
Spreads/Combo	MRXXXX	MLEG
Option	OXXXXX	OPT
Index	MRIXXX	INDEX
Minute Marker Block	MXXXXX	FUT
Trade at Auction	MXXXXX	FUT
Host	MXXXXX	FUT
Trade at Settlement **Note:** These instruments may have negative prices.	MXXXXX	FUT
Trade at Index Close	MXXXXX	FUT

3.3. Local Code String

The values of the referential tag **Local Code String** conveyed on the ICE market data stream are disseminated via QuantFEED® data stream in *Referential* to specify the security local code. The current format

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

Table 5 LocalCodeStr – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`LocalCodeStr`	QuantFEED® tag name.
Numeric ID	9500	QuantFEED® unique ID disseminated on 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 security local code, based on the MarketID of the messages from the ICE market data stream.

Below is an example of the current implementation of the updated referential tags (in blue):

```
instr # 432/831242 = 906800906
    Description                string{+01BRN   20150112C00103000 +01BRN   20150112P00103000}
    SecurityType                string{MLEG}
    StdMaturity                 string{20151}
    FOSMarketId                 ICEU
    CFICode                     string{MRXXXX}
    ProductComplex             string{+01BRN   20150112C00103000 +01BRN   20150112P00103000}
    InternalCreationDate        Timestamp{2014-04-02 18:38:06:006}
    InternalModificationDate    Timestamp{2014-04-09 01:04:36:484}
    InternalSourceId            uint16{66}
    LocalCodeStr                string{91457424}
    PriceIncrement_static       float64{0.01}
    UnderlyingFOSMarketId       ICEU
    UnderlyingLocalCodeStr      string{220264}
    UnderlyingFOSInstrumentCode uint32{906721343}
    MaturityYear                uint16{2015}
    MaturityMonth               uint8{1}
    MaturityDay                 uint8{12}
    LegFOSInstrumentCode        uint32{906747168}
    LegFOSInstrumentCode_1      uint32{906747169}
    LegRatioQty                 float64{1}
    LegRatioQty_1               float64{1}
    LegFIXSide                  '1'=Buy
    LegFIXSide_1                '1'=Buy
    MARKET_ICE_ContractSymbol   string{}
```

3.4. ICE L1 Kinematics Update

The following sections describe the kinematics of ICE market data stream before and after 2014-03-10:

- 3.4.1. ICE L1 Kinematics before 2014-03-10
- 3.4.2. ICE L1 Kinematics after 2014-03-10.

3.4.1. ICE L1 Kinematics before 2014-03-10

In the L1 kinematics before 2014-03-10, the daily open signals are sent when the ICE exchange declares its official opening price. S&P Capital IQ Real-Time Solutions simulates and sends the Daily Closing Signals of all instruments at 19:00 Eastern Time, as shown in the example below:

Sample ICE L1 kinematics before 2014-03-10

```
VU      13:45:00:060 1064024089      TradingStatus=21
TE      13:46:00:001 1064024089      21.3    *       *       *       *       *
VU      13:46:00:001 1064024089      LastAuctionPrice=21.3
...
VU      14:00:00:069 1064024089      TradingStatus=17
TE      14:00:00:076 null    1064024089      *       *       21.2    7       *       *
...
VU      14:19:26:594 1064024089      OpenInterest=48.18
...
TI      15:45:11:959 1064024089      OPEN    21.2
...
VU      18:00:00:057 1064024089      TradingStatus=2
...
VU      18:06:14:000 1064024089      DailySettlementPrice=21.38
SI      00:00:00:623 null    1064024089      CLOSE   21.54
TE      00:00:00:623 null    1064024089      21.54   *       !       0       !       0       C
```

3.4.2. ICE L1 Kinematics after 2014-03-10

In the L1 kinematics after 2014-03-10, S&P Capital IQ Real-Time Solutions sends the Daily Opening/Closing Signals of all instruments based on the `MarketStateChange` messages the market sends, which makes the signals more accurate, as shown in the example below:

Sample ICE L1 kinematics after 2014-03-10

```
VU      13:45:00:060 1064019764      TradingStatus=21
TE      13:46:00:001 1064019764      21.3    *       *       *       *       *
VU      13:46:00:001 1064019764      LastAuctionPrice=21.3
...
SI      14:00:00:069 1064019764      OPEN    *
TE      14:00:00:069 1064019764      *       *       *       *       *       *       O
VU      14:00:00:069 1064019764      TradingStatus=17
TE      15:11:54:895 1064019764      *       *       21.2    7@1     *       *
...
VU      14:19:26:594 1064019764      OpenInterest=4818
...
VU      15:45:11:960 1064019764      DailyOpeningPrice=21.2
...
SI      18:00:00:057 1064019764      CLOSE   21.54
TE      18:00:00:057 1064019764      21.54   *       *       *       *       *       C
VU      18:00:00:057 1064019764      TradingStatus=18
VU      18:06:14:000 1064019764      DailySettlementPrice=21.38
VU      18:06:14:751 1064019764      DailyOpeningPrice=21.2
```

3.5. System Priced Leg Trades Management

In the enhanced version of the ICE market data stream, all system priced leg trades are now considered “off-book” trades, to differentiate them from normal trades. Subsequently, `DailyOnBookTotalVolumeTraded` and `DailyOffBookTotalVolumeTraded` are always synchronized with the exchange after every trade.

3.6. Microsecond Timestamp Precision on L1

After **March 10, 2014**, the server timestamp will display microsecond units on L1, as shown in the example below (highlighted in green):

```
TE      11:00:22:091.520    906753116       *       *       *       *       -12.42  1@1
TE      11:00:22:091.612    906724891       *       *       11.75   26@5    *       *
TE      11:00:22:091.612    906725112       *       *       *       *       6       942@39
TE      11:00:22:091.868    906724923       *       *       13.25   23@4    *       *
```

4. Minimum Required Version of the QuantFEED® API

To properly consume the ICE market data stream after **March 10, 2014**, make sure you have the minimum required version of the QuantFEED® API, as described in the table below:

Table 6 Minimum required API version to properly consume the ICE Data Feed after the upgrade

Language	QuantFEED® API – minimum required version
C++	3.6.0.0
C#	2.4.0.0
Java	3.8.6.0

5. 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.