S&P Capital IQ Real-Time Solutions

QuantFEED® Developer's Notice

ICE – Feed Update

Reference n°: 20140721 – 20380 – 21955 – Update 02

Effective as of: 04 August 2014*

Action required from users: MANDATORY ACTION

S&P CAPITAL IQ
McGRAW HILL FINANCIAL

* This is the proposed day for the update of the standard version of the feed handler. For dedicated feed handlers, this date may differ. For the actual day when the changes to your custom feed handler take effect, please contact your QuantFEED® project manager.

S&P Capital IQ Real-Time Solutions (QuantHouse®) – QuantFEED®
QuantFEED® Developer's Notice
Reference 20140721 – 20380 – 21955 – Update 02
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UPDATE OF THE ICE MARKET DATA STREAM

To reflect the changes caused by the dissemination of new values on 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. Update Summary
- 2. QuantFEED® Technical Implementation
- 3. Finding the Latest Information.

1. Update Summary

Table 1 Current update summary

Notice Reference	20140721 – 20380 – 21955 – Update 02
Exchanges	ICE
Concerned MICs	ICEU, IFCA, ICUS
Internal Source ID	66, 88, 188
Effective Date	**2014-08-04***
Impact	• Update of the Referential Tags • Update of the Quotation Tags
Action required	**MANDATORY ACTION** – see sections 2.1.2. CFICode.

2. QuantFEED® Technical Implementation

Effective Monday, **August 04*, 2014**, S&P Capital IQ Real-Time Solutions enhances the referential and quotation data to accommodate the new information disseminated on the ICE market data stream, as described below:

- 2.1. Changes to the Referential Data
- 2.2. Changes to the Quotation Data.

* This is the proposed day for the update of the standard version of the feed handler. For dedicated feed handlers, this date may differ. For the actual day when the changes to your custom feed handler take effect, please contact your QuantFEED® project manager.

2.1. Changes to the Referential Data

S&P Capital IQ Real-Time Solutions **updates** the values of the referential tags below to accommodate the information disseminated on the ICE market data stream:

Table 2 Referential tags added on the ICE market data stream

Tag Name	Numeric ID	Type
`PriceCurrency`	15	String
`CFICode`	461	String

2.1.1. PriceCurrency

The values of the referential tag **PriceCurrency** conveyed on the ICE market data stream are disseminated via QuantFEED® data stream in *Referential* to specify the currency of the price.

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

Table 3 PriceCurrency – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`PriceCurrency`	QuantFEED® tag name.
Numeric ID	`15`	QuantFEED® unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`String`	String data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, specifying the currency of the price.
Possible Values	`EUR`	Euro
	`USD`	United States Dollar
	`USX`	United States Cents

2.1.2. CFICode

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 tag `CFICode` is described in the table below (existing values are in `black`, newly added values are in `green`, and removed values are in ~~`crossed out red`~~):

Table 4 CFICode – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`CFICode`	QuantFEED® tag name.
Numeric ID	`461`	QuantFEED® unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`String`	String data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, detailing the standardized identification code of an instrument.

Table 4 CFICode – technical implementation in QuantFEED® (Continued)

Component	Value	Description
Possible Values	FCAXXS	Futures - Commodities Futures - Agriculture, forestry and fishing - Spread
	FCAXXX	Futures - Commodities Futures - Agriculture, forestry and fishing
	FCEXXS	Futures - Commodities Futures - Extraction Resources - Spread
	FCEXXX	Futures - Commodities Futures - Extraction Resources
	~~FCXXXX~~	Futures - Commodities Futures
	FFCXXS	Futures - Financial Futures - Currencies - Spread
	FFCXXX	Futures - Financial Futures - Currencies
	FFIXXS	Futures - Financial Futures - Indices - Spread
	FFIXXX	Futures - Financial Futures - Indices
	FFMXXS	Futures - Financial Futures - Others - Spread
	FFMXXX	Futures - Financial Futures - Others
	~~MRIXXX~~	Other Instruments - Referential Instruments - Indices
	~~MRXXXX~~	Other Instruments - Referential Instruments
	MXXXXX	Other Instruments
	OCAFXX	Options - Call Options - American - Futures
	~~OCAXXX~~	Options - Call Options - American
	OCEFXX	Options - Call Options - European - Futures
	~~OCEXXX~~	Options - Call Options - European
	OPAFXX	Options - Put Options - American - Futures
	~~OPAXXX~~	Options - Put Options - American
	OPEFXX	Options - Put Options - European - Futures
	~~OPEXXX~~	Options - Put Options - European

Note	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. Moreover, Trade at Settlement instruments may have negative prices.

The example below shows the list `SecurityTypes` and `CFICodes`, before and after 2014-08-04:

```
BEFORE 2014-08-04                      AFTER 2014-08-04
{ ICEU FUT      FCXXXX }               { ICEU FUT      FCEXXX }
{ ICEU FUT      MXXXXX }               { ICEU FUT      FFMXXX }
{ ICEU MLEG     MRXXXX }               { ICEU FUT      MXXXXX }
{ ICEU OPT      OCAXXX }               { ICEU MLEG     FCEXXS }
{ ICEU OPT      OCEXXX }               { ICEU MLEG     FFMXXS }
{ ICEU OPT      OPAXXX }               { ICEU OPT      OCAFXX }
{ ICEU OPT      OPEXXX }               { ICEU OPT      OCEFXX }
{ IFCA FUT      FCXXXX }               { ICEU OPT      OPAFXX }
{ IFCA MLEG     MRXXXX }               { ICEU OPT      OPEFXX }
{ IFCA OPT      OCAXXX }               { IFCA FUT      FCAXXX }
{ IFCA OPT      OPAXXX }               { IFCA MLEG     FCAXXS }
{ ICUS FUT      FCXXXX }               { IFCA OPT      OCAFXX }
{ ICUS FUT      MXXXXX }               { IFCA OPT      OPAFXX }
{ ICUS INDEX    MRIXXX }               { ICUS FUT      FCAXXX }
{ ICUS MLEG     MRXXXX }               { ICUS FUT      FFCXXX }
{ ICUS OPT      OCAXXX }               { ICUS FUT      FFIXXX }
{ ICUS OPT      OPAXXX }               { ICUS FUT      MXXXXX }
                                       { ICUS MLEG     FCAXXS }
                                       { ICUS MLEG     FFCXXS }
                                       { ICUS MLEG     FFIXXS }
                                       { ICUS OPT      OCAFXX }
                                       { ICUS OPT      OPAFXX }
```

Referential Data Sample

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

```
geti 906729497
instr # 432/759833 = 906729497
    PriceCurrency               string{EUR}
    Symbol                      string{ECF-ECF}
    Description                 string{EUA Spr - EUA - Dec16/Dec20}
    SecurityType                string{MLEG}
    StdMaturity                 string{201612}
    FOSMarketId                 ICEU
    Factor                      float64{1000}
    ContractMultiplier          float64{1000}
    CFICode                     string{FCEXXS}
    NbLegs                      uint8{2}
    SecuritySubType             string{Future/Month-Future/Month}
    ProductComplex              string{+01ECF   20161219F -01ECF   20201214F}
    InternalCreationDate        Timestamp{2014-03-30 21:00:11:392}
    InternalModificationDate    Timestamp{2014-08-14 00:24:12:414}
    InternalSourceId            uint16{88}
    InternalEntitlementId       int32{1041}
    LocalCodeStr                string{400227}
    PriceIncrement_static       float64{0.01}
    MaturityYear                uint16{2016}
    MaturityMonth               uint8{12}
    MaturityDay                 uint8{19}
    OperatingMIC                string{IFEU}
    LegFOSInstrumentCode        uint32{906729541}
    LegFOSInstrumentCode_1      uint32{906729537}
    LegFIXSide                  '1'=Buy
    LegFIXSide_1                '2'=Sell
    MARKET_ICE_ContractSymbol   string{ECF FMZ0016-ECF FMZ0020}
```

2.2. Changes to the Quotation Data

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

Table 5 Quotation tags added on the ICE market data stream

Tag Name	Numeric ID	Type
`OpenInterestDate`	9382	Timestamp
`SettlementPriceDate`	9380	Timestamp
`PreviousSettlementPriceDate`	9381	Timestamp
`SettlementPriceType`	9383	Char
`PreviousSettlementPriceType`	9384	Char

2.2.1. OpenInterestDate

The values of the quotation tag **OpenInterestDate** conveyed on the ICE market data stream are disseminated via QuantFEED® data stream in *Other Values* to indicate the date of the derivative contracts that have not been settled in the immediately previous time period for a specific underlying security:

- 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.

QuantFEED® implementation of tag `OpenInterestDate` is described below:

Table 6 OpenInterestDate – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`OpenInterestDate`	QuantFEED® tag name.
Numeric ID	`9382`	QuantFEED® unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`Timestamp`	Timestamp data type.
Format / Possible Values	*`[Exchange Specific Value]`*	An ***exchange specific value***, indicating the date of the derivative contracts that have not been settled in the immediately previous time period for a specific underlying security.

2.2.2. SettlementPriceDate

The values of the quotation tag **SettlementPriceDate** conveyed on the ICE market data stream are disseminated via QuantFEED® data stream in *Other Values* to indicate the date of the settlement 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.

QuantFEED® implementation of the tag `SettlementPriceDate` is described below:

Table 7 SettlementPriceDate – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`SettlementPriceDate`	QuantFEED® tag name.
Numeric ID	`9380`	QuantFEED® unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`Timestamp`	Timestamp data type.
Format / Possible Values	*[Exchange Specific Value]*	An ***exchange specific value***, indicating the date of the settlement price.

2.2.3. PreviousSettlementPriceDate

The values of the quotation tag **PreviousSettlementPriceDate** conveyed on the ICE market data stream are disseminated via QuantFEED® data stream in *Other Values* to indicate the date of the previous settlement 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.

QuantFEED® implementation of the tag `PreviousSettlementPriceDate` is described below:

Table 8 PreviousSettlementPriceDate – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`PreviousSettlementPriceDate`	QuantFEED® tag name.
Numeric ID	`9381`	QuantFEED® unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`Timestamp`	Timestamp data type.
Format / Possible Values	*[Exchange Specific Value]*	An ***exchange specific value***, indicating the date of the previous settlement price.

2.2.4. SettlementPriceType

The values of the quotation tag **SettlementPriceDate** conveyed on the ICE market data stream are disseminated via QuantFEED® data stream in *Other Values* to indicate the type of settlement 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.

QuantFEED® implementation of the tag `SettlementPriceType` is described in the following table:

Table 9 SettlementPriceType – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`SettlementPriceType`	QuantFEED® tag name.
Numeric ID	`9383`	QuantFEED® 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`	Timestamp data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, indicating the type of settlement price.
Possible Values	a	Official Daily Settlement Price
	b	Official Indicative Settlement Price

2.2.5. PreviousSettlementPriceType

The values of the quotation tag **PreviousSettlementPriceDate** conveyed on the ICE market data stream are disseminated via QuantFEED® data stream in *Other Values* to indicate the type of the previous settlement 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.

QuantFEED® implementation of the tag `PreviousSettlementPriceType` is described in the following table:

Table 10 PreviousSettlementPriceType – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`PreviousSettlementPriceType`	QuantFEED® tag name.
Numeric ID	`9384`	QuantFEED® 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`	Timestamp data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, indicating the type of the previous settlement price.
Possible Values	a	Official Daily Settlement Price
	b	Official Indicative Settlement Price

Quotation Data Sample

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

```
InstrumentStatusL1
-- 507/772729
        BID: 1153.3     14      @9
        ASK: 1153.5     16      @12
        LastPrice                       float64{1153.4}
        LastTradeQty                    float64{1}
        DailyHighPrice                  float64{1165}
        DailyLowPrice                   float64{1146}
        DailyTotalVolumeTraded          float64{77609}
        DailyTotalAssetTraded           float64{89681449.8000012}
        LastTradePrice                  float64{1153.4}
        LastTradeTimestamp              Timestamp{2014-08-14 15:23:23:342}
        InternalDailyOpenTimestamp      Timestamp{2014-08-14 00:00:00:063}
        InternalDailyCloseTimestamp     Timestamp{2014-08-13 22:00:00:027}
        InternalDailyHighTimestamp      Timestamp{2014-08-13 17:25:34:174}
        InternalDailyLowTimestamp       Timestamp{2014-08-13 19:44:44:868}
        InternalPriceActivityTimestamp  Timestamp{2014-08-14 15:23:23:357}
        TradingStatus                   17=ReadyToTrade
        LastOffBookTradePrice           float64{1167.9}
        LastOffBookTradeQty             float64{254}
        LastOffBookTradeTimestamp       Timestamp{2014-08-07 20:48:14:917}
        SessionVWAPPrice                float64{1155.55}
        DailyOpeningPrice               float64{1161.5}
        PreviousDailyTotalVolumeTraded  float64{90341}
        PreviousDailyTotalAssetTraded   float64{105088903.699998}
        PreviousDailyClosingPrice       float64{1161.6}
        PreviousBusinessDay             Timestamp{2014-08-13}
        CurrentBusinessDay              Timestamp{2014-08-14}
        PreviousDailySettlementPrice    float64{1161.6}
        LastAuctionPrice                float64{1161.5}
        DailyTotalOffBookVolumeTraded   float64{0}
        DailyTotalOffBookAssetTraded    float64{0}
        OpenInterest                    float64{327392}
        InternalLastAuctionTimestamp    Timestamp{2014-08-14 23:51:16:436}
        PriceActivityMarketTimestamp    Timestamp{2014-08-14 15:23:23:357}
        SettlementPriceDate             Timestamp{2014-08-14}
        PreviousSettlementPriceDate     Timestamp{2014-08-13}
        OpenInterestDate                Timestamp{2014-08-13}
        SettlementPriceType             char{a}
        PreviousSettlementPriceType     char{a}
        MARKET_ICE_BlockVolume          float64{112}
        MARKET_ICE_EFPVolume            float64{1000}
```

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.