S&P Capital IQ Real-Time Solutions

QuantFEED® Developer's Notice

CEF CORE – Feed Update

Reference n°: 20141009 – 19027 – 23077

Effective as of: 24 November 2014

Action required from users: Attention Required

S&P CAPITAL IQ
McGRAW HILL FINANCIAL

S&P Capital IQ Real-Time Solutions (QuantHouse®) – QuantFEED®
QuantFEED® Developer's Notice
Reference 20141009 – 19027 – 23077
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UPDATE OF THE CEF CORE MARKET DATA STREAM

To reflect the changes caused by the dissemination of new values on the CEF CORE 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	20141009 – 19027 – 23077
Exchanges	CEF CORE
Concerned MICs	XEEE, EPEX, XDBV
Internal Source ID	23, 24, 25, 26, 27, 51, 87, 93, 94
Effective Date	**2014-11-24***
Impact	• Update of the Referential Tags • Update of the Quotation Tags
Action required	**Attention Required**

2. QuantFEED® Technical Implementation

Effective Monday, **November 24*, 2014**, S&P Capital IQ Real-Time Solutions enhances the quotation data to accommodate the new information disseminated on the CEF CORE 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 **introduces** the referential tag below to accommodate the information disseminated on the CEF CORE market data stream:

Table 2 Referential tags added on the CEF CORE market data stream

Tag Name	Numeric ID	Type	On Segment
`SecurityGroup`	1151	String	XETR, XFRA, XDUB
`ProductComplex`	1227	String	XEEE

2.1.1. SecurityGroup

The values of the referential tag **Security Group** conveyed on the CEF CORE market data stream are disseminated via QuantFEED® data stream in *Referential* to indicate an exchange specific name assigned to a group of related securities which may be concurrently affected by market events and actions.

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

Table 3 SecurityGroup – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`SecurityGroup`	QuantFEED® tag name.
Numeric ID	`1151`	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 / Possible Values	*`[Exchange Specific Value]`*	An ***exchange specific percentile value***, indicating an exchange specific name assigned to a group of related securities which may be concurrently affected by market events and actions.

2.1.2. ProductComplex

The values of the referential tag **ProductComplex** conveyed on the CEF CORE market data stream are disseminated via QuantFEED® data stream in *Referential* to identify an entire suite of products for a given market.

QuantFEED® implementation of the tag `ProductComplex` is detailed in the table below:

Table 4 ProductComplex – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`ProductComplex`	QuantFEED® tag name.
Numeric ID	`1227`	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***, identifying an entire suite of products for a given market.

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

Component	Value	Description
Possible Values	1	Simple Instrument
	2	Standard Option Strategy
	3	Non-Standard Option Strategy
	4	Volatility Strategy
	5	Futures Spread
	6	Inter-Product Spread
	7	Standard Futures Strategy
	8	Pack and Bundle
	9	Strip

Referential Data Sample

Below are several examples showing the current implementation of the newly added (in `green`) referential tags:

```
instr # 88/5387 = 184554763
    PriceCurrency               string{EUR}
    Symbol                      string{O1BM}
    SecurityType                string{OPT}
    StdMaturity                 string{201503}
    StrikePrice                 float64{30}
    FOSMarketId                 XEEE
    ContractMultiplier          float64{1}
    CFICode                     string{OPEXXX}
    SecurityStatus              uint8{1}
    ProductComplex              string{1}
    InternalCreationDate        Timestamp{2014-09-25 22:16:04:845}
    InternalModificationDate    Timestamp{2014-10-28 01:01:02:017}
    InternalSourceId            uint16{51}
    InternalEntitlementId       EEX
    LocalCodeStr                string{DE000A0AEQQ2.201503.P.30}
    ISIN                        string{DE000A0AEQQ2}
    PriceIncrement_static       float64{0.001}
    MaturityYear                uint16{2015}
    MaturityMonth               uint8{3}
    MaturityDay                 uint8{24}
    OperatingMIC                string{XEEE}
```

```
instr # 92/362121 = 193300105
    PriceCurrency                  string{EUR}
    Description                    string{COMMERZBANK 08/18 VAR 666}
    SecurityType                   string{NONE}
    FOSMarketId                    XFRA
    CFICode                        string{DBXXXX}
    SecurityGroup                  string{BD02}
    InternalCreationDate           Timestamp{2014-06-09 04:15:07:221}
    InternalModificationDate       Timestamp{2014-10-28 10:13:12:942}
    InternalSourceId               uint16{51}
    InternalEntitlementId          DES
    LocalCodeStr                   string{XS0368332200}
    ISIN                           string{XS0368332200}
    PriceIncrement_static          float64{0.001}
    WertpapierKennNummer           string{CB59FT}
    OperatingMIC                   string{XFRA}
    MARKET_XETRA_SegmentCode       string{None}
```

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 CEF CORE market data stream:

Table 5 Quotation tags added on the CEF CORE market data stream

Tag Name	Numeric ID	Type	On Segment
DailySettlementPrice	9133	Float64	XDUB, XBUL, XETR, XFRA, XDBV
PreviousDailySettlementPrice	9145	Float64	XDUB, XBUL, XETR, XFRA, XDBV
LastAuctionImbalanceSide	9151	Char	XBUL, XDUB, XETR, XMAL, XEEE
LastAuctionImbalanceVolume	9152	Float64	
InternalDailyClosingPriceType	9155	Char	XBER, XBUL, XDUB,XDUS, XEEE, XETR, XEUR, XFRA, XHAM, XMAL, XMUN, XSTV, XDBV
PreviousInternalDailyClosingPriceType	9156	Char	
SettlementPriceDate	9380	Timestamp	XDUB, XBUL, XETR, XFRA, XDBV
SettlementPriceType	9383	Char	XDUB, XBUL, XETR, XFRA, XDBV

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

Table 6 Quotation tags disseminating updated values on the CEF CORE market data stream

Tag Name	Numeric ID	Type
MARKET_CEF_LastTradeTradingPhase	14900	Char

2.2.1. DailySettlementPrice

The values of the quotation tag **DailySettlementPrice** conveyed on the CEF CORE market data stream are disseminated via QuantFEED® data stream in *Other Values* to specify the value of the daily 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 tag `DailySettlementPrice` is described in the table below:

Table 7 DailySettlementPrice – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`DailySettlementPrice`	QuantFEED® tag name.
Numeric ID	`9133`	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	`Float64`	Float64 data type.
Format / Possible Values	*`[Exchange Specific Value]`*	An ***exchange specific value***, specifying the value of the daily settlement price.

2.2.2. PreviousDailySettlementPrice

The values of the quotation tag **PreviousDailySettlementPrice** conveyed on the CEF CORE market data stream are disseminated via QuantFEED® data stream in *Other Values* to specify the value of the previous daily 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 tag `PreviousDailySettlementPrice` is described in the table below:

Table 8 PreviousDailySettlementPrice – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`PreviousDailySettlementPrice`	QuantFEED® tag name.
Numeric ID	`9145`	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	`Float64`	Float64 data type.
Format / Possible Values	*`[Exchange Specific Value]`*	An ***exchange specific value***, specifying the value of the previous daily settlement price.

2.2.3. LastAuctionImbalanceSide

The values of the quotation tag **LastAuctionImbalanceSide** conveyed on the CEF CORE market data stream are disseminated via QuantFEED® data stream in *Other Values* to indicate the imbalance side of a closing auction:

- 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 `LastAuctionImbalanceSide` is described below:

Table 9 LastAuctionImbalanceSide – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`LastAuctionImbalanceSide`	QuantFEED® tag name.
Numeric ID	`9151`	QuantFEED® 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	*`[Exchange Specific Value]`*	An ***exchange specific value***, detailing the imbalance side of a closing auction.
Possible Values	`B`	Buy
	`S`	Sell

2.2.4. LastAuctionImbalanceVolume

The values of the quotation tag **Last Auction Imbalance Volume** conveyed on the CEF CORE market data stream are disseminated via QuantFEED® data stream in *Other Values* to indicate the imbalance volume of a closing auction:

- 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 values available for the tag `LastAuctionImbalanceVolume` is described below:

Table 10 LastAuctionImbalanceVolume – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`LastAuctionImbalanceVolume`	QuantFEED® tag name.
Numeric ID	`9152`	QuantFEED® unique ID disseminated on S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`Float64`	Float64 data type.
Format / Possible Values	*`[Exchange Specific Value]`*	An ***exchange specific value***, detailing the imbalance volume of a closing auction.

2.2.5. InternalDailyClosingPriceType

The values of the quotation tag **InternalDailyClosingPriceType** conveyed on the CEF CORE market data stream are disseminated via QuantFEED® 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.

QuantFEED® implementation of the tag `InternalDailyClosingPriceType` is described in the table below (the values disseminated as of 2014-11-24 are highlighted in `green`):

Table 11 InternalDailyClosingPriceType – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`InternalDailyClosingPriceType`	QuantFEED® tag name.
Numeric ID	`9155`	QuantFEED® 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	*`[Internal Specific Value]`*	An ***internal specific value***, detailing the type of daily closing price, as described below.
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).

2.2.6. PreviousInternalDailyClosingPriceType

The values of the quotation tag **PreviousInternalDailyClosingPriceType** conveyed on the CEF CORE market data stream are disseminated via QuantFEED® 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.

QuantFEED® implementation of the tag `PreviousInternalDailyClosingPriceType` is described in the table below (the values disseminated as of 2014-11-24 are highlighted in `green`):

Table 12 InternalDailyClosingPriceType – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`PreviousInternalDailyClosingPriceType`	QuantFEED® tag name.
Numeric ID	`9156`	QuantFEED® 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	*`[Internal Specific Value]`*	An ***internal specific value***, detailing the type of daily closing price, as described below.
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).

2.2.7. SettlementPriceDate

The values of the quotation tag **SettlementPriceDate** conveyed on the CEF CORE 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 in the table below:

Table 13 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.

2.2.8. SettlementPriceType

The values of the quotation tag **SettlementPriceType** conveyed on the CEF CORE 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 (the values disseminated as of 2014-11-24 are highlighted in `green`):

Table 14 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** – Explicit Official Daily Settlement Price, as distributed by the exchange.
	b	**Preliminary** – Settlement Price subject to change until the Official Daily Settlement Price is published.
	z	**Manual** – Settlement Price disseminated manually (in case of a correction).
	0	**Undefined**

2.2.9. MARKET_CEF_LastTradeTradingPhase

The values of the quotation tag **MARKET_CEF_LastTradeTradingPhase** conveyed on the CEF CORE market data stream are disseminated via QuantFEED® data stream in *Other Values* to indicate the specific trading phase of the last traded instrument:

- 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 `MARKET_CEF_LastTradeTradingPhase` is described in the table below:

Table 15 MARKET_CEF_LastTradeTradingPhase – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`MARKET_CEF_LastTradeTradingPhase`	QuantFEED® tag name.
Numeric ID	14900	QuantFEED® unique ID broadcast on the S&P Capital IQ Real-Time Solutions data stream. It is the numeric equivalent of the tag name.
Type	`Char`	Char data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, detailing the specific trading phase of the last traded instrument.

Table 15 MARKET_CEF_LastTradeTradingPhase – technical implementation in QuantFEED® (Continued)

Component	Value	Description
Possible Values	A	Auction / Intraday IPO Auction / Continuous Auction / Midpoint Crossing
	B	Trade with Bundesbank participation
	C	Continuous Trading
	E	End-of-Day Auction
	F	Closing Auction / Vwap Crossing
	L	Liquidity Interruption
	M	Mini Auction
	O	Opening Auction / Opening IPO Auction
	S	Special Auction
	U	Price from Subscription period
	V	Volatility Interruption in Continuous Trading

Quotation Data Sample

Below are several examples showing the current implementation of the updated (in `blue`) quotation tags:

```
InstrumentStatusL1
-- 89/27508
        BID: 0  0       *NO ORDER*
        ASK: 0  0       *NO ORDER*
        LastPrice                       float64{374.06}
        DailyHighPrice                  float64{375.12}
        DailyLowPrice                   float64{372.07}
        InternalDailyOpenTimestamp      Timestamp{2014-10-28 08:00:15:626}
        InternalDailyCloseTimestamp     Timestamp{2014-10-27 16:30:15:538}
        InternalDailyHighTimestamp      Timestamp{2014-10-28 12:08:15:612}
        InternalDailyLowTimestamp       Timestamp{2014-10-28 08:00:15:626}
        InternalPriceActivityTimestamp  Timestamp{2014-10-28 14:31:45:588}
        TradingStatus                   17=ReadyToTrade
        DailyOpeningPrice               float64{372.07}
        DailySettlementPrice            float64{374.38}
        PreviousDailyClosingPrice       float64{371.46}
        PreviousBusinessDay             Timestamp{2014-10-27}
        CurrentBusinessDay              Timestamp{2014-10-28}
        InternalDailyClosingPriceType   char{a}
        PriceActivityMarketTimestamp    Timestamp{2014-10-28 14:31:45}
        SettlementPriceDate             Timestamp{2014-10-28}
        SettlementPriceType             char{a}
```

```
InstrumentStatusL1
-- 89/407556
        BID: 21.93      20000
        ASK: 22.06      20000
        LastPrice                       float64{22.47}
        InternalDailyOpenTimestamp      Timestamp{2014-10-28 08:04:07:039}
        InternalDailyCloseTimestamp     Timestamp{2014-10-27 16:36:05:022}
        InternalDailyHighTimestamp      Timestamp{2014-10-27 16:36:05:066}
        InternalDailyLowTimestamp       Timestamp{2014-10-27 16:36:05:066}
        InternalPriceActivityTimestamp  Timestamp{2014-10-28 14:30:04:985}
        TradingStatus                   17=ReadyToTrade
        PreviousDailyClosingPrice       float64{22.47}
        PreviousBusinessDay             Timestamp{2014-10-27}
        CurrentBusinessDay              Timestamp{2014-10-28}
        LastAuctionPrice                float64{22.47}
        LastAuctionImbalanceSide        char{S}
        LastAuctionImbalanceVolume      float64{19970}
        InternalDailyClosingPriceType   char{a}
        InternalLastAuctionTimestamp    Timestamp{2014-10-27 17:30:01:638}
        PriceActivityMarketTimestamp    Timestamp{2014-10-28 14:30:04:920}
        MARKET_XETRA_ULTRA_PLUS_InstrumentStatus        float64{26}

                                        --//--
InstrumentStatusL1
-- 97/16448
        BID: 0  0       *NO ORDER*
        ASK: 0  0       *NO ORDER*
        LastPrice                       float64{101.35}
        DailyHighPrice                  float64{101.35}
        DailyLowPrice                   float64{101.35}
        InternalDailyOpenTimestamp      Timestamp{2014-10-28 06:03:35:636}
        InternalDailyCloseTimestamp     Timestamp{2014-10-27 19:01:13:280}
        InternalDailyHighTimestamp      Timestamp{2014-10-28 10:39:49:579}
        InternalDailyLowTimestamp       Timestamp{2014-10-28 10:39:49:579}
        InternalPriceActivityTimestamp  Timestamp{2014-10-28 10:39:49:579}
        TradingStatus                   5=PriceIndication
        PreviousDailyClosingPrice       float64{101.35}
        PreviousBusinessDay             Timestamp{2014-10-27}
        CurrentBusinessDay              Timestamp{2014-10-28}
        InternalDailyClosingPriceType   char{a}
        PriceActivityMarketTimestamp    Timestamp{2014-10-28 10:39:49}
        MARKET_CEF_LastTradeTradingPhase        char{L}
```

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.