FeedOS™ Developer's Notice

CEF SCOACH – Feed Update

Reference n°: 20150625 – 26456 – 27097 – 27676

Standard FH, effective as of: 27 July 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: CEF SCOACH – Feed Update
Reference 20150625 – 26456 – 27097 – 27676
July 03, 2015

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UPDATE OF THE CEF SCOACH MARKET DATA STREAM

To improve the quality of market data disseminated on the CEF SCOACH 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
- 2. FeedOS Technical Implementation
- 3. Finding the Latest Information.

1. Update Summary

Table 1   Current update summary

Notice Reference	20150625 – 26456 – 27097 – 27676
Exchanges	CEF SCOACH
Concerned MICs	XETA
Internal Source ID	57
Effective Date	**2015-07-27**[*]
Impact	• Update of the Referential Tags • Update of the Quotation Tags
Action required	**MANDATORY ACTION** - see sections: • 2.1.4. CFICode.

2. FeedOS Technical Implementation

Effective Monday, **July 27**[*] **2015,** S&P Capital IQ Real-Time Solutions enhances the referential and quotation data to accommodate the information disseminated on the CEF SCOACH market data stream, as described below:

- 2.1. Changes to the Referential Data

- 2.2. Changes to the Quotation Data.

2.1. Changes to the Referential Data

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

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

Tag Name	Numeric ID	Type
MarketSegmentID	1300	String
MarketSegmentDesc	1396	String

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

Table 3   Referential tags disseminating updated values on the CEF SCOACH market data stream

Tag Name	Numeric ID	Type
Description	107	String
CFICode	461	String
MARKET_XETRA_SegmentCode	11100	String

2.1.1. MarketSegmentID

The values of the referential tag **MarketSegmentID** conveyed on the CEF SCOACH market data stream are disseminated via FeedOS data stream in *Referential* to detail the ID of the market segment.

FeedOS implementation of the values currently available for the tag MarketSegmentID is described below:

Table 4   MarketSegmentID – technical implementation in FeedOS

Component	Value	Description
Tag Name	MarketSegmentID	FeedOS tag name.
Numeric ID	1300	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 ID of the market segment.

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[*] 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.

2.1.2. MarketSegmentDesc

The values of the referential tag **MarketSegmentDesc** conveyed on the CEF SCOACH market data stream are disseminated via FeedOS data stream in *Referential* to describe the market segment.

FeedOS implementation of the values currently available for tag `MarketSegmentDesc` is described below:

Table 5   MarketSegmentDesc – technical implementation in FeedOS

Component	Value	Description
Tag Name	MarketSegmentDesc	FeedOS tag name.
Numeric ID	1396	FeedOS 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**, describing the market segment.

2.1.3. Description

The values of the referential tag **Description** conveyed on the CEF SCOACH market data stream are disseminated via FeedOS data stream in *Referential* to characterize an instrument.

FeedOS implementation of the tag `Description` is detailed in the table below:

Table 6   Description – technical implementation in FeedOS

Component	Value	Description
Tag Name	Description	FeedOS tag name.
Numeric ID	107	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** characterizing the instrument.

2.1.4. CFICode

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

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

Table 7   CFICode – technical implementation in FeedOS

Component	Value	Description
Tag Name	CFICode	FeedOS tag name.
Numeric ID	461	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	*[Exchange Specific Value]*	An **exchange specific value**, detailing the standardized identification code of an instrument.

Table 7   CFICode – technical implementation in FeedOS (Continued)

Component	Value	Description
Possible Values	DBXXXX	Debts - Bonds
	EXXXXX	Equities
	RWXXXX	Rights - Warrants
	TMXXXX	Referential Instruments - Other **Note:** This code describes a single instrument – XF0002000010 –, which represents the Scoach®-Put/Call-Sentiment. The Scoach®-Put/Call-Sentiment is a barometer for the latest mood in trading of certificates and leverage products. It covers all orders executed on-exchange in leverage products on the DAX® underlying, measured by the volume traded. For this instrument, the quotation tags LastPrice contains the intraday Put-Call Ratio value.
	XXXXXX	Other

The example below shows the possible combinations of SecurityTypes and CFICodes, before and after the migration day (please note that additional combinations may be available, as the exchange could introduce new instruments):

```
BEFORE 2015-07-27              AFTER 2015-07-27
{ XETA NONE DBXXXX }           { XETA NONE DBXXXX }
{ XETA NONE EXXXXX }           { XETA NONE TMXXXX }
{ XETA NONE XXXXXX }           { XETA NONE XXXXXX }
{ XETA WAR  RWXXXX }           { XETA WAR  RWXXXX }
```

2.1.5. MARKET_XETRA_SegmentCode

The values of the referential tag **MARKET_XETRA_SegmentCode** conveyed on the CEF SCOACH market data stream are disseminated via FeedOS data stream in *Referential* to uniquely identify a particular trading area as defined by the exchange.

FeedOS implementation of the tag MARKET_XETRA_SegmentCode is detailed in the table below:

Table 8   MARKET_XETRA_SegmentCode – technical implementation in FeedOS

Component	Value	Description
Tag Name	MARKET_XETRA_SegmentCode	FeedOS tag name.
Numeric ID	11100	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	*[Exchange Specific Value]*	An **exchange specific value** uniquely identifying a particular trading area as defined by the exchange. **Note:** The values disseminated by this tag before 2015-07-27 will be disseminated by the tag MarketSegmentDesc (1396, String).
Possible Values	XEXC	Certificates and Warrants in continuous auction
	XEXD	Reserved exchange segment - currently not in use
	XEXI	IPOs of securities
	XEXR	Subscription rights in Single Auction

Table 8   MARKET_XETRA_SegmentCode – technical implementation in FeedOS (Continued)

Component	Value	Description
	XEXS	Certificates and Warrants in single auction
	XEXY	Securities in subscription
	XEXZ	Bonds in subscription
Possible Values	XEA1	Reserved exchange segment - currently not in use
	XEA2	Reserved exchange segment - currently not in use
	XEF1	Reserved exchange segment - currently not in use
	XEF2	Reserved exchange segment - currently not in use

Referential Data Sample

The example below shows the implementation of the newly added (in green) and updated (in blue) referential tags:

```
instr # 341/1000 = 715129832
    Description                string{PUT / CALL Ratio Indicator}
    SecurityType               string{NONE}
    FOSMarketId                XETA
    CFICode                    string{TMXXXX}
    SecurityStatus             uint8{1}
    MarketSegmentID            string{9}
    MarketSegmentDesc          string{Scoach Frankfurt 2}
    InternalCreationDate       Timestamp{2015-06-30 09:42:47:413}
    InternalModificationDate   Timestamp{2015-06-30 09:42:47:413}
    InternalSourceId           uint16{79}
    InternalEntitlementId      XEA
    LocalCodeStr               string{XF0002000010}
    ISIN                       string{XF0002000010}
    OperatingMIC               string{XSCO}
    MARKET_XETRA_SegmentCode   string{XEXC}
```

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 SCOACH market data stream:

Table 9   Quotation tags added on the CEF SCOACH market data stream

Tag Name	Numeric ID	Type
MARKET_XETRA_ULTRA_PLUS_InstrumentStatus	14480	Float64

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

Table 10   Quotation tags disseminating updated values on the CEF SCOACH market data stream

Tag Name	Numeric ID	Type
LastPrice	9106	Float64

2.2.1. MARKET_XETRA_ULTRA_PLUS_InstrumentStatus

Each time a change of the instrument status occurs, the values of the quotation tag **MARKET_XETRA_ULTRA_PLUS_InstrumentStatus** conveyed on the CEF SCOACH 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 **MARKET_XETRA_ULTRA_PLUS_InstrumentStatus** is described in the table below:

Table 11   MARKET_XETRA_ULTRA_PLUS_InstrumentStatus – technical implementation in FeedOS

Component	Value	Description
Tag Name	MARKET_XETRA_ULTRA_PLUS_Instrument Status	FeedOS tag name.
Numeric ID	14480	FeedOS unique ID broadcast on the S&P Capital IQ Real-Time Solutions data stream. It is the numeric equivalent of the tag name.
Type	Float64	Float64 data type.
Format	*[Exchange Specific value]*	An **exchange specific value**, as described below, concerning the status of the instrument.
Possible Values	0	Start
	1	Pre Trading
	2	Pre-call
	3	Crossing Period
	4	Closing Crossing Period
	5	Opening Auction Call
	6	Intra Day Auction Call
	7	Closing Auction Call
	8	End Auction Call
	9	Auction Call
	10	Opening Auction IPO Call
	11	Opening Auction IPO Freeze
	12	Intra Day Auction IPO Call
	13	Intra Day Auction IPO Freeze
	14	IPO
	15	Quote Driven IPO Freeze
	16	Opening Auction Pre-Orderbook Balancing
	17	Intra Day Auction Pre-Orderbook Balancing
	18	Closing Auction Pre-Orderbook Balancing
	19	End-of-day Auction Pre-Orderbook Balancing
	20	Pre-Orderbook Balancing of Quote Driver Auction
	21	Opening Auction Orderbook Balancing
	22	Intra Day Auction Orderbook Balancing
	23	Closing Auction Orderbook Balancing
	24	End-of-day Auction Orderbook Balancing

Table 11   MARKET_XETRA_ULTRA_PLUS_InstrumentStatus – technical implementation in FeedOS (Continued)

Component	Value	Description
Possible Values	25	Orderbook Balancing
	26	Continuous Trading
	27	In Between Auctions
	28	Post Trading
	29	End of Trading
	30	Halt
	31	Suspend
	32	Volatility Interruption
	35	Add
	36	Delete
	38	Call Unfreeze
	39	Continuous Auction Pre-Call
	40	Continuous Auction Call
	41	Continuous Auction Freeze
	51	Knocked Out
	52	Knocked Out / Revoked
	53	Midpoint Book Freeze
	54	Midpoint Book Unfreeze

2.2.2. LastPrice

The values of the quotation tag **LastPrice** conveyed on the CEF SCOACH market data stream are disseminated via FeedOS data stream in *Other Values* to indicate the last price of an 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.

FeedOS implementation of the tag `LastPrice` is described in the following table:

Table 12   LastPrice – technical implementation in FeedOS

Component	Value	Description
Tag Name	LastPrice	FeedOS tag name.
Numeric ID	9106	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	Float64	Float64 data type.
Format / Possible Values	*[Exchange Specific Value]*	An ***exchange specific value***, detailing the last price of an instrument. **Note:** For the instrument XF0002000010, this tag disseminates the intraday Put-Call Ratio value. The Put-Call Ratio value describes the Scoach®-Put/Call-Sentiment, which is a barometer for the latest mood in trading of certificates and leverage products. It covers all orders executed on-exchange in leverage products on the DAX® underlying, measured by the volume traded.

Quotation Data Sample

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

```
InstrumentStatusL1
-- 341/796653
    LastPrice                       float64{0.4115}
    TradingStatus                   5=PriceIndication
    DailyOpeningPrice               float64{0.4115}
    DailyHighPrice                  float64{0.4118}
    DailyLowPrice                   float64{0.4115}
    CurrentBusinessDay              Timestamp{18-07-2015}
    PreviousBusinessDay             Timestamp{17-07-2015}
    PreviousDailyClosingPrice       float64{0.4323}
    InternalDailyClosingPriceType   char{d}

InstrumentStatusL1
-- 341/1000
        BID: 0      0
        ASK: 0      0
        LastPrice                   float64{93.07}
        DailyHighPrice              float64{93.07}
        DailyLowPrice               float64{92.98}
        InternalDailyOpenTimestamp  Timestamp{2015-06-09 07:00:02:894}
        InternalDailyCloseTimestamp Timestamp{2015-06-08 18:09:41:187}
        InternalDailyHighTimestamp  Timestamp{2015-06-09 08:11:04:603}
        InternalDailyLowTimestamp   Timestamp{2015-06-09 07:30:20:663}
        InternalPriceActivityTimestamp  Timestamp{2015-06-09 09:40:19:080}
        TradingStatus               5=PriceIndication
        PreviousDailyClosingPrice   float64{91.99}
        PreviousBusinessDay         Timestamp{2015-06-08}
        CurrentBusinessDay          Timestamp{2015-06-09}
        InternalDailyClosingPriceType   char{d}
        PriceActivityMarketTimestamp    Timestamp{2015-06-09 09:40:15:001}
        MARKET_XETRA_ULTRA_PLUS_InstrumentStatus  float64{1}
```

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: https://support.quanthouse.com.