

## **FeedOS™ Developer's Notice**

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### **CHIX EU – Feed Update**

Reference n°: 20150102 – 23648 – 23799

**Effective as of: 30 January 2015\***

**Action required from users: MANDATORY ACTION**



\* 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  
FeedOS™ Developer's Notice: CHIX EU – Feed Update  
Reference 20150102 – 23648 – 23799  
January 06, 2015

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# UPDATE OF THE CHIX EU MARKET DATA STREAM

To reflect the changes caused by the dissemination of new values on the CHIX EU 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	20150102 – 23648 – 23799
Exchanges	CHIX EU
Concerned MICs	CHIX
Internal Source ID	34
Effective Date	2015-01-30*
Impact	<ul style="list-style-type: none"><li>• Update of the Quotation Tags</li><li>• Update of the Quotation Context Tags</li><li>• Update of the Level1 Market Data Kinematics – Addition of Auction Phases</li><li>• Addition of the AT BEST Prices</li></ul>
Action required	<b>MANDATORY ACTION</b> - see sections: <ul style="list-style-type: none"><li>• <a href="#">2.1.7. TradingStatus</a></li><li>• <a href="#">2.3. Addition of Auction Phases on the Level1 Market Data.</a></li></ul>

## 2. FeedOS Technical Implementation

Effective Friday, **January 30<sup>\*</sup> 2015**, S&P Capital IQ Real-Time Solutions enhances the quotation and quotation context data, and introduces an Auction Phase in the Level1 Market Data to accommodate the new information disseminated on the CHIX EU market data stream, as described below:

- [2.1. Changes to the Quotation Data](#)
- [2.2. Changes to the Quotation Context Data](#)
- [2.3. Addition of Auction Phases on the Level1 Market Data](#)
- [2.4. Addition of the AT BEST Prices.](#)

### 2.1. Changes to the Quotation Data

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

**Table 2** Quotation tags added on the CHIX EU market data stream

Tag Name	Numeric ID	Type	Applicable to
<a href="#">LastAuctionPrice</a>	9146	Float64	Listed securities only – REGM segment
<a href="#">LastAuctionVolume</a>	9147	Float64	
<a href="#">LastAuctionImbalanceSide</a>	9151	Char	
<a href="#">LastAuctionImbalanceVolume</a>	9152	Float64	
<a href="#">TradingReferencePrice</a>	9370	Float64	All instruments
<a href="#">MARKET_BATS_AuctionType</a>	14850	Char	Listed securities only – REGM segment

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

**Table 3** Quotation tags disseminating updated values on the CHIX EU market data stream

Tag Name	Numeric ID	Type	Applicable to
<a href="#">TradingStatus</a>	9100	Enum	Listed securities only – REGM segment

#### 2.1.1. LastAuctionPrice

The values of the quotation tag **LastAuctionPrice** conveyed on the CHIX EU market data stream are disseminated via FeedOS data stream in *Other Values* to detail the last price:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#

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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.

- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag **LastAuctionPrice** is described in the following table:

**Table 4 LastAuctionPrice – technical implementation in QuantFEED®**

Component	Value	Description
Tag Name	LastAuctionPrice	FeedOS tag name.
Numeric ID	9146	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	<i>[Exchange specific value]</i>	An <i>exchange specific value</i> , detailing the last auction price.

### 2.1.2. LastAuctionVolume

The values of the quotation tag **LastAuctionVolume** conveyed on the CHIX EU market data stream are disseminated via FeedOS data stream in *Other Values* to detail the last volume:

- 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 **LastAuctionVolume** is described in the following table:

**Table 5 LastAuctionVolume – technical implementation in QuantFEED®**

Component	Value	Description
Tag Name	LastAuctionVolume	FeedOS tag name.
Numeric ID	9147	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	<i>[Exchange specific value]</i>	An <i>exchange specific value</i> , detailing the last auction volume.

### 2.1.3. LastAuctionImbalanceSide

The values of the quotation tag **LastAuctionImbalanceSide** conveyed on the CHIX EU market data stream are disseminated via FeedOS 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.

FeedOS implementation of the tag LastAuctionImbalanceSide is described below:

**Table 6 LastAuctionImbalanceSide – technical implementation in QuantFEED®**

Component	Value	Description
Tag Name	LastAuctionImbalanceSide	FeedOS tag name.
Numeric ID	9151	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>[Exchange specific value]</i>	An <b>exchange specific value</b> , detailing the imbalance side of a closing auction.
Possible Values	B	Buy
	S	Sell

### 2.1.4. LastAuctionImbalanceVolume

The values of the quotation tag **Last Auction Imbalance Volume** conveyed on the CHIX EU market data stream are disseminated via FeedOS 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.

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

**Table 7 LastAuctionImbalanceVolume – technical implementation in QuantFEED®**

Component	Value	Description
Tag Name	LastAuctionImbalanceVolume	FeedOS tag name.
Numeric ID	9152	FeedOS 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	<i>[Exchange specific value]</i>	An <b>exchange specific value</b> , detailing the imbalance volume of a closing auction.

### 2.1.5. TradingReferencePrice

The values of the quotation tag **TradingReferencePrice** conveyed on the CHIX EU market data stream are disseminated via FeedOS data stream in *Other Values* to indicate the reference 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 `TradingReferencePrice` is described in the following table:

**Table 8      `TradingReferencePrice` – technical implementation in QuantFEED®**

Component	Value	Description
Tag Name	<code>TradingReferencePrice</code>	FeedOS tag name.
Numeric ID	9370	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	<i>[Exchange Specific Value]</i>	An <b>exchange specific value</b> , indicating the reference price.

### 2.1.6. `MARKET_BATS_AuctionType`

The values of the quotation tag `MARKET_BATS_AuctionType` conveyed on the CHIX EU market data stream are disseminated via FeedOS data stream in *Context* to detail the auction type:

- 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_BATS_AuctionType` is described in the table below:

**Table 9      `MARKET_BATS_AuctionType` – technical implementation in FeedOS**

Component	Value	Description
Tag Name	<code>MARKET_BATS_AuctionType</code>	FeedOS tag name.
Numeric ID	14850	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	<i>[Exchange Specific Value]</i>	An <b>exchange specific value</b> , detailing the auction type.
Possible Values	C	Closing Auction
	H	Halt Auction
	O	Opening Auction
	V	Volatility Auction

### 2.1.7. `TradingStatus`

Each time a modification of the trading status occurs, the values of the quotation tag `TradingStatus` conveyed on the CHIX EU 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 (newly added values are in **green**):

**Table 10 Trading Status of the CHIX EU market data stream – technical implementation in FeedOS**

Component	Value	Description	
Tag Name	TradingStatus	FeedOS tag name.	
Numeric ID	9100	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	Enum	Enumeration data type.	
Format	<i>[Exchange Specific Value]</i>	An <b>exchange specific value</b> , as described below, concerning the characteristics of the trading status.	
Possible Values	2	Trading Halt	Whenever an instrument is halted.
	5	Price Indication	07:50-08:00 London Local Time
	15	New Price Indication	Whenever the Price Indication is extended, for price matching. See section 2.3. <a href="#">Addition of Auction Phases on the Level1 Market Data</a> .
	16	Trade Dissemination Time	16:30-16:50 London Local Time
	17	Ready to Trade	08:00-16:30 London Local Time
	18	Not Available for Trading	16:50-07:50 London Local Time

## Quotation Data Sample

Below are several examples of the quotation tags implementation (newly added tags are in **green**, updated tags are in **blue**):

```
"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..."
```

```
VU 07:30:04:448.859 768311292 TradingReferencePrice=2758
TE 09:32:51:702.746 768311292 2758 * * * * * L
TE 09:33:02:648.072 768311292 * * * * * 2758 40@3
VU 12:00:00:128.663 768311292 TradingStatus=5
```

[...]

```
TE 16:30:00:003.669 768317512 * * 201.03 100@1 * *
TE 16:30:00:003.669 768317512 * * 0 5000@1 * *
VU 16:30:00:003.669 768317512 MARKET_BATS_AuctionType=C
LastAuctionImbalanceVolume=500 LastAuctionImbalanceSide=B LastAuctionVolume=4500
LastAuctionPrice=201.42
SI 16:30:00:003.669 768317512 CLOSE 201.42
TE 16:30:00:003.669 768317512 201.42 * * * * * C
VU 16:30:00:003.669 768317512 InternalDailyClosingPriceType=a
VU 16:35:06:072.139 768317512 TradingStatus=15
TE 16:37:03:280.021 768317512 201.42 4500 * * ! 0
TradeID=3624826319439, AggressorSide='1'=Buy, MMTFlagsV2=1KP-----
TE 16:37:03:280.021 768317512 * * 0 500@1 * *
TE 16:37:03:280.021 768317512 * * ! 0 * *
VU 16:37:03:280.021 768317512 TradingStatus=16
VU 17:30:00:027.304 768317512 TradingStatus=18
```



## 2.2. Changes to the Quotation Context Data

Moreover, S&P Capital IQ Real-Time Solutions [updates](#) the values of the quotation context tags below:

**Table 11** Quotation context tags disseminating updated values on the CHIX EU market data stream

Tag Name	Numeric ID	Type	Applicable to
MMTFlagsV2	9901	String	Listed securities only – REGM segment

### 2.2.1. MMTFlagsV2

The values of the quotation tag **MMTFlagsV2** conveyed on the CHIX EU market data stream are disseminated via FeedOS data stream in *Context* to detail the Market Model Typology (version 2) applicable to the trade:

- 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 **MMTFlagsV2** is described in the table below (newly available values are in [green](#)):

**Table 12** MMTFlagsV2 – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	MMTFlagsV2	FeedOS tag name.
Numeric ID	9901	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	<i>[Exchange specific value] 10-character long</i>	An <i>exchange specific value</i> , detailing the Market Model Typology (version 2) applicable to the trade.
Possible Values	<b>MMT Level 1 - MARKET MECHANISM – OFFSET 1</b>	
	1	Central Limit Order Book
	2	Quote Driven Market
	3	Dark Order Book
	4	Off Book
	<b>MMT Level 2 - TRADING MODE – OFFSET 2</b>	
	1	Undefined Auction
	2	Continuous Trading
	3	At Market Close Trading
	4	Out of Main Session Trading
	5	Trade Reporting (On Exchange)
	6	Trade Reporting (Off Exchange)
	7	Trade Reporting (Systematic Internaliser)
	<b>O</b>	Scheduled Opening Auction
	<b>K</b>	Scheduled Closing Auction
	I	Scheduled Intraday Auction
	U	Unscheduled Auction

Table 12 MMTFlagsV2 – technical implementation in QuantFEED® (Continued)

Component	Value	Description
Possible Values	<b>MMT Level 3 - TRANSACTION TYPE</b>	
	<b>3.1. TRANSACTION CATEGORY – OFFSET 3</b>	
	P	Plain-Vanilla Trade
	D	Dark Trade
	T	Technical Trade
	G	Give-up/Give-In Trade
	F	Trade with Conditions
	<b>3.2. NEGOTIATED TRANSACTION INDICATOR – OFFSET 4</b>	
	N	Negotiated Trade
	-	No Negotiated Trade
	<b>3.3. CROSSING TRADE INDICATOR – OFFSET 5</b>	
	X	Crossing Trade
	-	No Crossing Trade
	<b>3.4. MODIFICATION INDICATOR – OFFSET 6</b>	
	C	Trade Cancellation
	A	Trade Amendment
	-	New Trade
	<b>3.5. BENCHMARK INDICATOR – OFFSET 7</b>	
	B	Benchmark Trade
	-	No Benchmark Trade
	<b>3.6. EX/CUM DIVIDEND INDICATOR – OFFSET 8</b>	
	E	Ex/cum dividend Trade
	-	No Ex/Cum Dividend Trade
	<b>MMT Level 4 - PUBLICATION MODE – OFFSET 9</b>	
	-	Immediate Publication
	1	Non Immediate Publication
	<b>3.7. OFF BOOK AUTOMATED INDICATOR – OFFSET 10</b>	
	Q	Automated
	M	Manual
	-	Not Specified

## Quotation Context Data Sample

Below is an example showing the updated (in [blue](#)) quotation context tags:

```

"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..."

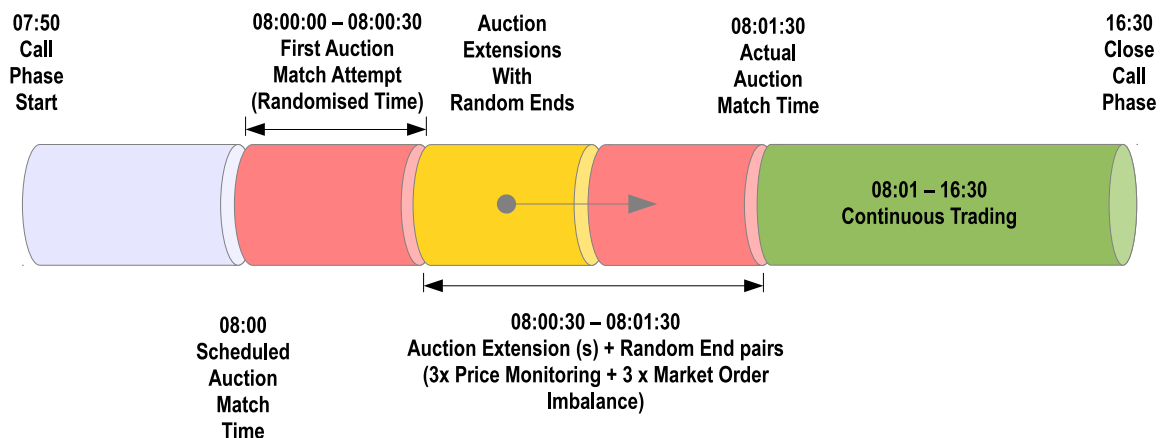
TE  12:05:02:076.494  768311292  *    *    2759 480@1  *    *
TE  12:05:02:076.494  768311292  2759 *    *    *    *    *    H
TE  12:05:02:076.494  768311292  2759 20  *    *    2759 500@1
TradeID=3624826318921, AggressorSide='1'=Buy, MMTFlagsV2=1KP-----

```

## 2.3. Addition of Auction Phases on the Level1 Market Data

Effective 2015-01-30, the exchange introduces Opening and Closing Auctions for the BATS Regulated Market Listed ETF (REGM segment) securities. The auction phases can be extended until the prices are matched, as shown in the following diagram:

Figure 1 Auction Phase Example



## 2.4. Addition of the AT BEST Prices

Effective 2015-01-30, during an auction, the exchange will notify the AT BEST prices for the BATS Regulated Market Listed ETF (REGM segment) securities available on the CHIX EU market data stream, 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..."

TE 06:09:00:939.722 768309740 * * ! 0 ! 0
VU 06:09:01:956.007 768309740 InternalDailyClosingPriceType=a
VU 06:09:01:956.007 768309740 TradingStatus=18
VU 07:50:00:072.865 768309740 TradingStatus=5
VU 07:50:00:072.865 768309740 MARKET_BATS_AuctionType=0 LastAuctionImbalanceVolume=0
LastAuctionImbalanceSide=N LastAuctionVolume=? LastAuctionPrice=9.5
TE 07:51:21:842.038 768309740 * * AT_BEST 2000@1 * *
TE 07:51:24:743.920 768309740 * * AT_BEST 2020@2 * *
```

## 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](mailto:rts-support@spcapitaliq.com)
- Web: <http://support.quanthouse.com>.