S&P Capital IQ Real-Time Solutions

FeedOS™ Developer's Notice

LSE MIT – Feed Update

Reference n°: 20150107 – 20959 – 20960

Effective as of: 26 January 2015*

Action required from users: MANDATORY ACTION

S&P CAPITAL IQ
McGRAW HILL FINANCIAL

* 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: LSE MIT – Feed Update
Reference 20150107 – 20959 – 20960
January 09, 2015

France Offices
52 Rue de la Victoire
75009 Paris
France
Tel: +33 (0) 1 73 02 32 11

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

UK Office
20 Canada Square
Canary Wharf
London E14 5LH
United Kingdom
Tel: +44 (0) 203 107 1676

Singapore Office
12 Marina Boulevard
#23-01 Marina Bay
Financial Centre Tower 3
Singapore 018982
Tel: +65 6530 6546

www.capitaliq.com

UPDATE OF THE LSE MIT MARKET DATA STREAM

To reflect the changes caused by the dissemination of new values on the LSE MIT 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	20150107 – 20959 – 20960
Exchanges	LSE MIT
Concerned MICs	XLON, Xloi
Internal Source ID	32, 33
Effective Date	**2015-01-26***
Impact	• Update of the Referential Tags • Update of the Quotation Tags • Update of the Quotation Context Tags • Changes to the Level 1 Market Data Kinematics – Off Book Trades Eligibility Rules • Changes to the Firm Quote Management
Action required	**MANDATORY ACTION** - see sections: • 2.1.1. SecurityType • 2.1.2. CFICode • 2.4. Changes to the Level1 Market Data Kinematics – Off Book Trades Eligibility Rules.

2. FeedOS Technical Implementation

Effective Monday, **January 26*** **2015,** S&P Capital IQ Real-Time Solutions enhances the referential, quotation, quotation context data, and Market News to accommodate the new information disseminated on the LSE MIT market data stream, as described below:

- 2.1. Changes to the Referential Data
- 2.2. Changes to the Quotation Data
- 2.3. Changes to the Quotation Context Data
- 2.4. Changes to the Level1 Market Data Kinematics – Off Book Trades Eligibility Rules
- 2.5. Changes to the Firm Quote Management.

2.1. Changes to the Referential Data

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

Table 2 Referential tags disseminating updated values on the LSE MIT market data stream

Tag Name	Numeric ID	Type
`SecurityType`	167	String
`CFICode`	461	String

2.1.1. SecurityType

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

FeedOS implementation of the tag `SecurityType` is described in the table below (existing values are in `black`, newly added values are in `green`):

Table 3 SecurityType – technical implementation in FeedOS

Component	Value	Description
Tag Name	`SecurityType`	FeedOS tag name.
Numeric ID	`167`	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 type of security.

* 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.

Table 3 SecurityType – technical implementation in FeedOS (Continued)

Component	Value	Description
Possible Values	CB	Convertible Bond
	CD	Certificate of Deposit
	ETF	Exchange-Traded Funds
	MTN	Medium Term Notes
	NONE	None
	PS	Preferred Stock
	SECLOAN	Securities Loan
	WAR	Warrant

2.1.2. CFICode

The values of the referential tag **CFI Code** conveyed on the LSE MIT 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 4 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.
Possible Values	DBXXXX	Debts - Bonds
	DCXXXX	Debts - Convertible Bonds
	DMXXXX	Debts - Others
	DTXXXX	Debts - Medium-term Notes
	DXXXXX	Debts
	DYXTXX	Debts - Money market instruments - Government/Treasury Guarantee
	ERXXXX	Equities - Preferred Shares
	ESXXXX	Equities - Shares
	EUXXXX	Equities - Units
	EXXXXX	Equities
	MRXXXX	Other - Referential Instruments
	RWCXXX	Rights - Warrants - Currencies
	RWSXXX	Rights - Warrants - Stock-Equities
	RXXXXX	Rights
	~~XXXXXX~~	Undefined

The list 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 2015-01-26                AFTER 2015-01-26
DBXXXX   NONE                    DCXXXX   CB
DXXXXX   NONE                    ESXXXX   CD
DCXXXX   CB                      EUXXXX   ETF
DCXXXX   CB                      DTXXXX   MTN
RWCXXX   WAR                     DBXXXX   NONE
DYXTXX   NONE                    DXXXXX   NONE
EXXXXX   NONE                    DYXTXX   NONE
ESXXXX   CD                      EUXXXX   NONE
RWSXXX   WAR                     EXXXXX   NONE
DXXXXX   NONE                    MRXXXX   NONE
DBXXXX   NONE                    RXXXXX   NONE
EXXXXX   NONE                    ERXXXX   PS
DMXXXX   SECLOAN                 DMXXXX   SECLOAN
DTXXXX   MTN                     RWCXXX   WAR
ERXXXX   PS                      RWSXXX   WAR
EUXXXX   NONE                    ESXXXX   CD
RXXXXX   NONE                    EXXXXX   NONE
MRXXXX   NONE
XXXXXX   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 LSE MIT market data stream:

Table 5 Quotation tags added on the LSE MIT market data stream

Tag Name	Numeric ID	Type
`InternalDailyClosingPriceType`	9155	Char

2.2.1. InternalDailyClosingPriceType

The values of the quotation tag **InternalDailyClosingPriceType** conveyed on the LSE MIT market data stream are disseminated via FeedOS 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.

FeedOS implementation of the tag `InternalDailyClosingPriceType` is described in the table below (the values disseminated as of 2015-01-26 are highlighted in `green`):

Table 6 InternalDailyClosingPriceType – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`InternalDailyClosingPriceType`	FeedOS tag name.
Numeric ID	`9155`	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	*`[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.
Possible Values	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).

Quotation Data Sample

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

```
InstrumentStatusL1
-- 295/809958
        BID: 0.623      75000   @1
        ASK: 0.628      75000   @1
        LastPrice                       float64{0.637}
        InternalDailyOpenTimestamp      Timestamp{2015-04-08 08:15:03:087}
        InternalDailyCloseTimestamp     Timestamp{2015-04-07 16:30:01:052}
        InternalPriceActivityTimestamp  Timestamp{2015-04-08 15:07:19:771}
        TradingStatus                   17=ReadyToTrade
        LastOffBookTradePrice           float64{0.637}
        LastOffBookTradeQty             float64{1540}
        LastOffBookTradeTimestamp       Timestamp{2015-01-06 08:34:30:807}
        PreviousDailyClosingPrice       float64{0.6975}
        PreviousBusinessDay             Timestamp{2015-04-07}
        CurrentBusinessDay              Timestamp{2015-04-08}
        DailyTotalOffBookVolumeTraded   float64{0}
        DailyTotalOffBookAssetTraded    float64{0}
        InternalDailyClosingPriceType   char{b}
        MARKET_LSE_SuspendedIndicator   char{N}
        MARKET_LSE_MIT_TradingStatusDetails     string{T}
```

2.3. Changes to the Quotation Context Data

S&P Capital IQ Real-Time Solutions **introduces** the quotation context tags below:

Table 7 Quotation context tags added on the LSE MIT market data stream

Tag Name	Numeric ID	Type
`TradeId`	1003	String

2.3.1. TradeId

Each time a trade occurs, the values of the quotation context tag **TradeID** conveyed on the LSE MIT market data stream are disseminated via FeedOS data stream in *Context* to detail the unique ID assigned to the trade entity once it is received or matched by the exchange or central counterparty:

- 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 `TradeID` is described in the table below:

Table 8 TradeID – technical implementation in FeedOS

Component	Value	Description
Tag Name	`TradeID`	FeedOS tag name.
Numeric ID	1003	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 unique ID assigned to the trade entity once it is received or matched by the exchange or central counterparty.

Quotation Context Data Sample

Below is an example showing the newly added (in `green`) 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   15:44:30:071.779   295/750274   4696.5  200     *   *   4697   467@4
TradeID=1105864559760355
TE   15:44:30:616.857   295/750006   79.01   14282   *   *   *      *      f
TradeID=1105864505185118, TradeConditionsDictionaryKey=uint32{161480805},
MARKET_LSE_MIT_OffBookReportingTradeTypeIndicator=1006
```

2.4. Changes to the Level1 Market Data Kinematics – Off Book Trades Eligibility Rules

Effective 2015-01-26, the eligibility rules for the calculation of volumes and Open, Close, High, Low prices change. Thus, based on the values the tag `MARKET_LSE_MIT_OffBookReportingTradeTypeIndicator` receives, the off book trade can alter the volume and prices or not, being notified, in the latter case the event being notified via FeedOS data stream in *Market News*:

- in the callback carrying the Level1 event `notif_MarketNews()`, for C++
- in the event handler `MarketNewsEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifMarketNewsEvent`, for Java.

The table below details the FeedOS implementation of the tag `MARKET_LSE_MIT_OffBookReportingTradeTypeIndicator` and the different values that trigger volume and price alteration, and Market News notification:

Table 9 MARKET_LSE_MIT_OffBookReportingTradeTypeIndicator – technical implementation in FeedOS

Component	Value	Description	
Tag Name	`MARKET_LSE_MIT_OffBookReportingTradeTypeIndicator`	FeedOS tag name.	
Numeric ID	15950	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	String	String data type.	
Format	*[Exchange Specific Value]*	An ***exchange specific value***, detailing the off book trade type.	**Eligibility Rule**
Possible Values	17	LC – Late correction	Notify in Market News
	24	PC – Previous Day Contra	Notify in Market News
	1000	O – Ordinary trade	Alter the volume and the prices
	1004	IF – Inter Fund Transfer with delayed publication requested	Notify in Market News
	1005	NK – Negotiated trade with delayed publication requested	Alter the volume and the prices
	1006	NT – Negotiated trade with immediate publication	Alter the volume and the prices
	1007	OC – Cancellation of OTC trade more than three days old	Notify in Market News
	1008	OK – Ordinary Trade with delayed publication requested	Alter the volume and the prices
	1009	OT – OTC Trade with immediate publication	Notify in Market News
	1010	SC – SI Late Correction	Notify in Market News
	1011	SI – SI Trade	Notify in Market News
	1012	SK – SI Trade with delayed publication requested	Notify in Market News
	1013	TK – OTC Trade with delayed publication requested	Notify in Market News
	1018	BF – Inter Fund Cross with delayed publication requested (MTF 1 TBA)	Notify in Market News
	1019	BC – Cancellation of OTC Trade after date of publication (MTF 1 TBA)	Notify in Market News
	1020	QT – OTC Trade (MTF 2 TBA)	Notify in Market News
	1021	QK – OTC Trade with delayed publication requested (MTF 2 TBA)	Notify in Market News
	1022	QF – Inter Fund Cross with delayed publication requested (MTF 2 TBA)	Notify in Market News
	1023	QC – Cancellation of OTC Trade after date of publication (MTF 2 TBA)	Notify in Market News
	1024	MT – OTC Trade (MTF 3 TBA)	Notify in Market News
	1025	MK – OTC Trade with delayed publication requested (MTF 3 TBA)	Notify in Market News
	1026	MF – Inter Fund Cross with delayed publication requested (MTF 3 TBA)	Notify in Market News

Table 9 MARKET_LSE_MIT_OffBookReportingTradeTypeIndicator – technical implementation in FeedOS

Component	Value	Description	
Possible Values	1027	MC – Cancellation of OTC Trade after date of publication (MTF 3 TBA)	Notify in Market News
	1028	CT – OTC Trade (MTF 4 TBA)	Notify in Market News
	1029	CK – OTC Trade with delayed publication requested (MTF 4 TBA)	Notify in Market News
	1031	CC – Cancellation of OTC Trade after date of publication (MTF 4 TBA)	Notify in Market News
	1032	GC – Delayed Publication Late Correction	Notify in Market News
	2001	BT – OTC Trade (MTF 1 TBA)	Notify in Market News
	2002	CF – Inter Fund Cross with delayed publication requested (MTF 4 TBA)	Notify in Market News
	3001	BK – OTC Trade with delayed publication requested (MTF 1 TBA)	Notify in Market News

Below is an example showing an off book trade notification disseminated in the market news:

```
MN      null    null    XLON    Normal  OffBook Trade (non eligible)
[LocalCodeStr=6785|MessageType=x|ExecutedQuantity=75000|InstrId=6785|Price=1527.66|TradeId=
1115762391524613|MessageType=x|TradeType=1007|TradeDate=2014-12-
09|TradeTime=16:50:00|Currency=GBX|OriginalPrice=0|]    related_instruments: 295/750051
```

2.5. Changes to the Firm Quote Management

Effective 2015-01-26, the Firm Quote management changes as described below:

- if an instrument has orders from an on book trade, but not from a firm quote, only the on book orders will be provided
- if an instrument has orders from an on book trade and a firm quote, only the on book orders will be provided
- if an instrument doesn't have orders from an on book trade, but it has from a firm quote, only the firm quote orders will be provided.

The following table summarizes the changes:

Table 10 Firm Quote management matrix

On Book	Firm Quote	Book originates in
Yes	No	On Book
Yes	Yes	On Book
No	Yes	Firm Quote

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.