QuantHouse® FeedOS™

FeedOS™ Developer's Notice

JSE Data Feed Migration to MilleniumIT

Reference n°: 20120629

Effective as of: 02 July 2012

Action required from users: Mandatory

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Reference 20120629
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JSE DATA FEED MIGRATION TO MILLENIUMIT

To reflect the changes caused by the migration of the Johannesburg Stock Exchange market data stream to the MilleniumIT format, QuantHouse® has decided to enhance the content of QuantFEED®. These changes also require customers using JSE Data Feed for replay purposes to upgrade their FeedOS™ API.

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. Functional Description
- 3. QuantFEED® Technical Implementation
- 4. Upgrading FeedOS™ API for Replay Purposes
- 5. Finding the Latest Information.

1. Update Summary

Table 1 Current update summary

Notice Reference	20120629
Scope	Reference Data
Exchanges	Johannesburg Stock Exchange – JSE Data Feed
Effective Date	**2012-07-02**
Impact	• Update of the Referential and Quotation Tags • FeedOS™ API Upgrade for Feed Replay
Action required	Mandatory

2. Functional Description

Starting **July 02, 2012**, QuantHouse® changes the content of `LocalCodeStr` referential tag to accommodate the information disseminated on JSE Data Feed, following the migration to the MilleniumIT format.

The following referential tags are no longer disseminated:

- `Issuer` (**NumericID:** `106`, **Type:** `String`)
- `MinTradeVol` (**NumericID:** `562`, **Type:** `Float64`)

- `SecuritySubType` (**NumericID:** 762, **Type:** `String`)
- `SEDOL` (**NumericID:** 9505, **Type:** `String`).

The referential tag **`MARKET_LSE_SegmentCode`** (**NumericID:** 11002, **Type:** `String`) is replaced by the referential tag **`SecurityGroup`** (**NumericID:** 1151, **Type:** `String`).

Furthermore, the new quotation tag **`MARKET_JSE_MIT_TradingStatusDetails`** (**Numeric ID:** 14970, **Type:** `Char`) and the quotation context tag **`MARKET_JSE_MIT_AuctionTypeIndicator`** (**Numeric ID:** 16320, **Type:** `Char`) will be disseminated in QuantFEED®'s Level 1 Data Stream to detail the trading status and type of auction, respectively.

Additionally, the quotation tag **`TradingStatus`** (**NumericID:** 9100, **Type:** `Enum`) has different possible values (Pre-Open Trading Status is now 21, previously it was 5).

3. QuantFEED® Technical Implementation

The following sections describe the technical implementation of the new or updated tags:

- 3.1. Technical Implementation of the Referential Tags
- 3.2. Technical Implementation of the Quotation Tags.

3.1. Technical Implementation of the Referential Tags

The tag `LocalCodeStr` is disseminated via QuantHouse®'s data stream in *Referential*, when new details about the instrument and market are available.

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

Table 2 Johannesburg Stock Exchange LocalCodeStr technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`LocalCodeStr`	QuantFEED® tag name.
Numeric ID	9500	QuantFEED® unique ID disseminated on QuantHouse®'s 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*** concerning the local code. For more details, see section 2. Functional Description on page 1.

The following referential tags are no longer disseminated:

- `Issuer` (**NumericID:** 106, **Type:** String)
- `MinTradeVol` (**NumericID:** 562, **Type:** `Float64`)
- `SecuritySubType` (**NumericID:** 762, **Type:** `String`)
- `SEDOL` (**NumericID:** 9505, **Type:** `String`).

Furthermore, the referential tag **`MARKET_LSE_SegmentCode`** (**NumericID:** 11002, **Type:** `String`) is replaced by the referential tag **`SecurityGroup`** (**NumericID:** 1151, **Type:** `String`).

Below is an example of the previous and current implementation of the tags in the market data stream of Johannesburg Stock Exchange:

JSE Old Version

```
instr # 232/1147 = 486540411
    PriceCurrency                string{ZAC}
    Symbol                       string{SHP}
    Issuer                       string{SHOPRITE HOLDINGS LIMITED}
    Description                  string{SHOPRITE HOLDINGS LIMITED SHOPRITE HLDGS LTD ORD}
    SecurityType                 string{CS}
    FOSMarketId                  XJSE
    CFICode                      string{ESXXXX}
    RoundLot                     float64{1}
    SecuritySubType              string{OS}
    InternalCreationDate         Timestamp{2012-06-18 04:02:04:668}
    InternalModificationDate     Timestamp{2012-06-18 04:10:44:914}
    InternalSourceId             uint16{31}
    LocalCodeStr                 string{ZA_ZAE000012084}
    ISIN                         string{ZAE000012084}
    SEDOL                        string{6801575}
    PriceIncrement_static        float64{1}
    MARKET_LSE_NormalMarketSize float64{70000}
    MARKET_LSE_SectorCode        string{J1H2}
    MARKET_LSE_SegmentCode       string{ZA01}
```

JSE New Version

```
instr # 232/1147 = 486540411
    PriceCurrency                string{ZAC}
    Symbol                       string{SHP}
    Description                  string{Shoprite Hldgs Ltd Ord}
    SecurityType                 string{NONE}
    FOSMarketId                  XJSE
    CFICode                      string{XXXXXX}
    RoundLot                     float64{1}
    SecurityGroup                string{ZA01}
    InternalCreationDate         Timestamp{2012-06-18 12:01:23:348}
    InternalModificationDate     Timestamp{2012-06-18 12:01:23:348}
    InternalSourceId             uint16{1}
    LocalCodeStr                 string{780}
    ISIN                         string{ZAE000012084}
    PriceIncrement_static        float64{1}
    MARKET_LSE_NormalMarketSize float64{70000}
    MARKET_LSE_SectorCode        string{J1H2}
```

3.2. Technical Implementation of the Quotation Tags

The sections below describe the technical implementation of the following quotation tags:

- 3.2.1. MARKET_JSE_MIT_TradingStatusDetails Quotation Tag
- 3.2.2. TradingStatus Quotation Tag
- 3.2.3. MARKET_JSE_MIT_AuctionTypeIndicator Quotation Context Tag.

3.2.1. MARKET_JSE_MIT_TradingStatusDetails Quotation Tag

Each time a modification of the status details occurs, the new tag `MARKET_JSE_MIT_TradingStatusDetails` is being broadcast as a quotation tag via QuantFEED®'s 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.

QuantFEED®'s implementation of the values currently available for the tag `MARKET_JSE_MIT_TradingStatusDetails` is described in the following table:

Table 3 MARKET_JSE_MIT_TradingStatusDetails technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`MARKET_JSE_MIT_TradingStatusDetails`	QuantFEED® tag name.
Numeric ID	`14970`	QuantFEED® unique ID disseminated on QuantHouse®'s data stream. This is the numeric equivalent of the tag name.
Type	`Char`	Char data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, as described below, concerning the characteristics of the trading status. For more details, see section 2. Functional Description on page 1.
Possible Values	H	Halt
	T	Continuous Trading
	a	Opening Auction Call (Pre-Open)
	b	Post-Close
	c	Market Close (Closed)
	d	Closing Auction Call
	e	Volatility Auction Call
	f	Re-Opening Auction Call
	l	Pause
	p	Futures Close Out
	u	Intra-Day Auction Call
	v	End of Trade Reporting
	w	No Active Session
	x	End of Post Close
	y	Pre-Trading (Start of Trading)

Below is an example of the current implementation of the tag `MARKET_JSE_MIT_TradingStatusDetails` in the market data stream of Johannesburg Stock Exchange:

```
InstrumentStatusL1
-- 232/750001
        BID: 1784       100     @1
        ASK: 1785       75      @1
        LastPrice                       float64{1785}
        LastTradeQty                    float64{125}
        DailyHighPrice                  float64{1789}
        DailyLowPrice                   float64{1784}
        DailyTotalVolumeTraded          float64{3200}
        DailyTotalAssetTraded           float64{5715785}
        LastTradePrice                  float64{1785}
        LastTradeTimestamp              Timestamp{2012-06-25 17:13:35:803}
        InternalDailyOpenTimestamp      Timestamp{2012-06-25 07:30:29:234}
        InternalDailyCloseTimestamp     Timestamp{2012-06-24 15:08:21:498}
        InternalDailyHighTimestamp      Timestamp{2012-06-25 07:37:07:541}
        InternalDailyLowTimestamp       Timestamp{2012-06-25 10:21:54:563}
        InternalPriceActivityTimestamp  Timestamp{2012-06-25 16:13:35:895}
        TradingStatus                   17=ReadyToTrade
        DailyOpeningPrice               float64{1786}
        PreviousDailyTotalVolumeTraded  float64{0}
        PreviousDailyTotalAssetTraded   float64{0}
        PreviousDailyClosingPrice       float64{1776}
        PreviousBusinessDay             Timestamp{2012-06-24}
        CurrentBusinessDay              Timestamp{2012-06-25}
        LastAuctionPrice                float64{1786}
        LastAuctionVolume               float64{350}
        InternalLastAuctionTimestamp    Timestamp{2012-06-25 07:10:10:077}
        MARKET_LSE_SuspendedIndicator   char{N}
        MARKET_JSE_MIT_TradingStatusDetails     char{T}
```

3.2.2. TradingStatus Quotation Tag

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

Table 4 JSE TradingStatus technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`TradingStatus`	QuantFEED® tag name.
Numeric ID	9100	QuantFEED® unique ID disseminated on QuantHouse®'s data stream. This is the numeric equivalent of the tag name.
Type	`Enum`	Char data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, as described below, concerning the trading status. For more details, see section 2. Functional Description on page 1.

Table 4 JSE TradingStatus technical implementation in QuantFEED® (Continued)

Component	Value	Description
Possible Values	2	Halt
	3	Resume
	5	Price Indication
	17	Ready to Trade
	18	Not Available for Trading
	20	Unknown
	21	Pre-open

3.2.3. MARKET_JSE_MIT_AuctionTypeIndicator Quotation Context Tag

Each time a modification of the auction type occurs, the new tag `MARKET_JSE_MIT_AuctionTypeIndicator` is being broadcast as a quotation tag via QuantFEED®'s data stream in *Context*:

- 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®'s implementation of the values currently available for the quotation context tag `MARKET_JSE_MIT_AuctionTypeIndicator` is described in the following table:

Table 5 MARKET_JSE_MIT_AuctionTypeIndicator technical implementation

Component	Value	Description
Tag Name	`MARKET_JSE_MIT_AuctionTypeIndicator`	QuantFEED® tag name.
Numeric ID	`16320`	QuantFEED® unique ID disseminated on QuantHouse®'s data stream. This is the numeric equivalent of the tag name.
Type	`Char`	Char data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, as described below, concerning the auction type indicator. For more details, see section 2. Functional Description on page 1.
Possible Values	A	Volatility
	C	Closing Auction
	E	Re-Opening Auction
	K	Intra-Day Auction
	L	Futures Closeout Auction
	O	Opening Auction

Below are several examples of the current implementation of the tag `MARKET_JSE_MIT_AuctionTypeIndicator` in the market data stream of Johannesburg Stock Exchange:

```
EV 232/750584          2012-06-27 08:35:13:859.982 /ServerUTCTime: 2012-06-27 13:41:22:392
content: OtherValues Context
CONTEXT:
TradeConditionsDictionaryKey:   uint32{100663402}
        MARKET_JSE_MIT_AuctionTypeIndicator:    char{A}
VALUES:
    LastAuctionPrice            float64{0}
    LastAuctionVolume           float64{0}



EV 232/750876          2012-06-27 10:59:28:795.668 /ServerUTCTime: 2012-06-27 13:55:45:106
content: OtherValues Context
CONTEXT:
TradeConditionsDictionaryKey:   uint32{100663407}
        MARKET_JSE_MIT_AuctionTypeIndicator:    char{C}
VALUES:
    LastAuctionPrice            float64{56317}
    LastAuctionVolume           float64{211956}



EV 232/750863          2012-06-27 10:06:28:498.730 /ServerUTCTime: 2012-06-27 13:50:28:402
content: OtherValues Context
CONTEXT:
TradeConditionsDictionaryKey:   uint32{100663406}
        MARKET_JSE_MIT_AuctionTypeIndicator:    char{K}
VALUES:
    LastAuctionPrice            float64{0}
    LastAuctionVolume           float64{0}



EV 232/750258          2012-06-27 10:00:01:220.377 /ServerUTCTime: 2012-06-27 13:49:50:009
content: OtherValues Context
CONTEXT:
TradeConditionsDictionaryKey:   uint32{100663405}
        MARKET_JSE_MIT_AuctionTypeIndicator:    char{L}
VALUES:
    LastAuctionPrice            float64{196}
    LastAuctionVolume           float64{437}



EV 232/1010            2012-06-28 06:59:55:528.632 /ServerUTCTime: 2012-06-28 11:17:49:276
content: OtherValues Context
CONTEXT:
TradeConditionsDictionaryKey: uint32{100663401}
        MARKET_JSE_MIT_AuctionTypeIndicator:    char{O}
VALUES:
    LastAuctionPrice            float64{4976}
    LastAuctionVolume           float64{1557}
```

4. Upgrading FeedOS™ API for Replay Purposes

To be able to replay the JSE Data Feed that is recorded after the migration date – **July 02, 2012** –, you should upgrade the FeedOS™ API to the minimum required version, as described in the table below:

Table 6 Currently required version to replay JSE Data Feed

Language	FeedOS™ API – minimum required version
C++	3.6.3.3
C#	2.4.3.4

For more details about the upgrade procedure, see *FeedOS™API Guide*.

5. Finding the Latest Information

For the latest documentation and product updates, additional support and training, please contact our support services:

- E-mail: support@quanthouse.com
- Web: http://support.quanthouse.com.