

# **Interest Rates Derivatives**

## **Non-Live Market Data Products Specifications**

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## 1. Version Control

Version	Author	Date	Reason for Changes
0.1	Tshepo Modise	22 May 2019	Document creation

## 2. DISCLAIMER

This specification is being provided to you strictly for informational purposes solely for the purpose of developing or operating systems for your use that interact with market data systems of JSE Limited. JSE reserves the right to withdraw, modify, or replace the specification (or any part thereof) at any time.

To the extent allowed by law, JSE does not (expressly, tacitly or impliedly) guarantee or warrant the availability, sequence, accuracy, completeness, reliability or any other aspect of any of the information contained in, linked to or distributed through this specification, or that the information contained therein is up to date.

## 3. Introduction

The aim of this document is to provide users with relevant information on the reference and statistical data provided on the day's trading activity via a standardised format. Data is provided in the form of fixed width data records which are made available via the JSE Information Delivery Portal (IDP) FTP server which does not require a direct network connection.

Users can select which data records are required from the standard layouts available. To allow for full flexibility, each market has its own set of data records. Due to the data records being produced at different times and frequencies, the subscribed set of data records will be made available be made available in one or more separate data files.

The filename standards will be as follows:

Equity Derivatives Products: DDAP.SPRD.alphacode.IR.zip

Where *alphacode* is the unique code assigned to each separate data subscriber company

Prospective subscribers must contact the Market Data Department in writing via [MDSalesTeam@jse.co.za](mailto:MDSalesTeam@jse.co.za) if they are interested in subscribing to any of the records.

### 3.1 CONFIRMATION OF IDP USER ID AND PASSWORD

1. A representative from the Client Service Centre will provide you with your sign-on and dataset name before the day you go live.
2. For security purposes, a representative from the JSE will provide you with your Password.
3. A Market Data Account Manager from the Information Services Division will contact you to confirm receipt of the Dataset, User ID and Password.
4. The onus is on you to test as soon as you have received the above mentioned information to ensure that you successfully access to the system.

Should you experience any problems relating to the information communicated to you or the actual testing of this information, please contact the under-mentioned persons for assistance:

- |    |                        |                     |
|----|------------------------|---------------------|
| 1. | Client Service Centre  | 011 520 7777 / 7799 |
| 2. | Market Data Department | 011 520 7000        |

#### 4. Data Product List

Product Name	Market	Delivery Time	Dissemination Frequency	Delivery Channel	Associated Records
Daily Traded Statistics	Interest rate	20:00	Daily	FTP	DIR – Subtype 1
Daily Full Market Statistics	Interest rate	20:00	Daily	FTP	DIR – Subtype 2
Daily Traded Type Totals	Interest rate	20:00	Daily	FTP	SIR – Subtype 1
Daily Full Market Type Totals	Interest rate	20:00	Daily	FTP	SIR – Subtype 2
Daily Traded Overall Totals	Interest rate	20:00	Daily	FTP	OIR – Subtype 1
Daily Full Market Overall Totals	Interest rate	20:00	Daily	FTP	OIR – Subtype 2
Mark to Market	Interest rate	20:00	Daily	FTP	MIR – Subtype 1
Interest Rates	Interest rate	20:00	Daily	FTP	RIR – Subtype 1

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## 5. Contracts vs. Instruments

A contract is defined as a tradable item on a market. A contract name can be made up of the following:

- Type of contract e.g. Future, Option or Spot.
- Instrument
- An expiry, valuation or maturity date (2009-06-21)
- A strike price
- And Option Type i.e. whether it is a Call or a Put.

**Each set/combination of the above elements makes up an individual contract name.**

- The **Contract Type** refers to the type of derivative that the contract represents and could comprise one of the following:

CHARACTER	CONTRACT
F	Future
Y	Option
S	Spot

- **Instrument** refers to the underlying commodity/asset/financial instrument on which a derivative is based.
- The **Date** refers to the expiry date, valuation or maturity date of the individual contract. This is the date essentially when the contract matures.
- The **Strike Price** is the price at which the buyer/holder of an option has the right to buy/sell the underlying For Futures, the Strike Price will zero whereas for Options, the strike price will be the strike value of the option.
- An **Option Type**, which could be :

A **Call** – which gives the buyer of the option the right, but not the obligation, to buy the underlying asset at a specified price (strike price) on or before a certain date. The seller of a call option is obliged to deliver the underlying asset at the strike price, regardless of the current market value of the asset at the time of option exercise.

or;

A **Put** - which gives the buyer of the option the right, but not the obligation, to sell the underlying asset at a specified price on or before a certain date. The seller of a put option is obliged to take delivery of the underlying security at the put strike price, regardless of the current market value of the asset at the time of option exercise.

## 6. Field Formats

A field descriptor will also be given that describes the contents:

- A: Alpha only
- N: Numeric only - fields which are definitely whole numbers (integers) will show N (I)
- AN: Alpha numeric
- DATE: 8 byte date field formatted as CCYYMMDD
- B: Boolean – Formatted 'T' for True; 'F' for False

Alphabetic fields where the data is shorter than the specified number of bytes will have the space character (ASCII value 32) appended to the data to fill the field to its fixed width.

Numeric fields may be either integral or decimal depending on the nature of the data that is stored. For values that are decimal in nature, the decimal point will be present and in a fixed position, which will be indicated in the record type specifications. The decimal point will consume 1 byte of space.

Some amount of space has been left, both in the record headers and the record bodies for future expansion. This space is marked as “filler” and will be populated with the specified number of space (ASCII value 32) characters to fill the field until such time as that space is needed for other pertinent information.

## 7. Interest Rates

### 7.1 Leading Record Layout

Each record will begin with a header that contains fields common to all records. The data fields that make up each different record will be contained in the data sub-records.

Header					Sub Record 1
Common data	Record Type	Record Sub type	Run Date	Other common data	Data Fields

FIELD NAME	START POS	LENGTH	DATA TYPE	NUMERIC FORMATS	END POS
Market Number	1	1	N (I)	1	1
Contract Type	2	1	A		2
Instrument Type	3	10	A		12
Record type	13	4	A		16
Record Sub type	17	4	AN		20
Run Date	21	8	DATE		28
Filler	29	20	A		48

#### **FIELD DESCRIPTIONS:**

##### MARKET NUMBER

The different Derivatives markets are identified by a unique identifier and number, as per the below table:

Market Number	Market Identifier	Full Market Name
3	IR	Interest Rate

##### CONTRACT TYPE

This indicates the type of the contract

**F** = Future, **Y** = Option and **S** = Spot

##### INSTRUMENT TYPE

This indicates the type of the instrument underlying the contract e.g.

IRC

IRC Spot (YXS)

IRC Future (YXF)

##### RECORD TYPE

The code indicating the type of information that is being disseminated e.g.:

DIR – Daily record type for the Yield-X Market

##### RECORD SUB TYPE

The Sub Type related to a particular record sub type - e.g. Sub Type 01.



RUN DATE	The date of the dissemination runs, in the format CCYYMMDD.
FILLER	To cater for future expansion
DATA (LAYOUTS BELOW)	The fields that make up each relevant record type(s) are provided further down under the record sub-types.

## 7.2 Daily Traded Statistics - DIR Sub Type 01

The Daily Yield-X Traded Statistics records are calculated at the close of each trading day. All daily Yield-X statistics (for spot and derivatives instruments) fall within record type **DIR - Daily Interest Rate**.

The statistics are grouped into various sub types, which allows you to select the type of data that you require. The different sub types and the relevant field layouts are listed below.

The Daily Traded Statistics record only contains the contracts that were traded on the day on the Yield-X market.

FIELD NAME	START POS	LENGTH	DATA TYPE	NUMERIC FORMATS	END POS
Instrument	49	4	A		52
Date	53	8	DATE		60
Strike Price	61	17	N	10.6	77
Option Type	78	1	A		78
Spot Price	79	17	N	10.6	95
Closing Bid	96	17	N	10.6	112
Closing Offer	113	17	N	10.6	129
MTM	130	17	N	10.6	146
First Price	147	17	N	10.6	163
Last Price	164	17	N	10.6	180
High Price	181	17	N	10.6	197
Low Price	198	17	N	10.6	214
Number of deals	215	14	N (I)	14	228
Volume	229	14	N (I)	14	242
Value Traded	243	21	N	14.6	263
Open Interest	264	14	N (I)	14	277
Volatility	278	11	N	4.6	288
Filler	289	51	A		339

### FIELD DESCRIPTIONS:

#### INSTRUMENT

**Instrument** refers to the underlying instrument that the contract is written on.

#### DATE

The **Date** refers to the expiry date or valuation date of the individual contract.

#### STRIKE PRICE

The **Strike Price** is the price at which the buyer/holder of an option has the right to buy/sell the underlying future.

For Futures, the strike price will zero whereas for Options, the strike price will be the strike value of the option

#### OPTION TYPE

An option can be a Put or a Call.

#### SPOT PRICE

The closing price of the underlying instrument.

CLOSING BID	The closing price at which a market participant is willing to buy.
CLOSING OFFER	The closing price at which a market participant is willing to sell.
MTM	The official closing price as determined by the Exchange
FIRST PRICE	The first execution price of a trade the specified day.
LAST PRICE	The last execution price of a trade the specified day.
HIGH PRICE	The highest execution price of a trade on the specified day.
LOW PRICE	The lowest execution price of a trade on the specified day.
NUMBER OF DEALS	The total number of deals traded on the specified day.
VOLUME TRADED	The total number of contracts traded on the specified day.
VALUE TRADED	The total value of the contracts traded on the specified day.
OPEN INTEREST	The amount of open interest on the specified contract
VOLATILITY	The extent to which the return of the underlying asset will fluctuate between now and the option's expiration. Only applicable to Options.
FILLER	To cater for future expansion

### 7.3 Daily Traded Type Totals - SIR Sub Type 01

All contracts traded on the market are grouped according to the type of contract (e.g. Future or Option) and the underlying instrument type they represent e.g. Bonds, .

The totals for each grouping are calculated at the close of trading each day.

All the daily type totals fall within record type **SIR**. The statistics are grouped into various sub types, which allows you to select the type of information you require. The different sub types and the relevant field layouts are listed.

FIELD NAME	START POS	LENGTH	DATA TYPE	NUMERIC FORMATS	END POS
Total number of contracts per Contract and Instrument Type	49	14	N (I)	14	62
Total number of Deals per Contract and Instrument Type	63	14	N (I)	14	76
Total Value of contracts per Contract and Instrument Type	77	21	N	14.6	97
Total Open Interest per Contract and Instrument Type	98	14	N (I)	14	111
Filler	112	51	A		162

#### **FIELD DESCRIPTIONS:**

TOTAL NUMBER OF CONTRACTS PER CONTRACT AND INSTRUMENT TYPE

The total number of Contracts that fall within the Contract and Instrument type for the specified day.

TOTAL NUMBER OF DEALS PER CONTRACT AND INSTRUMENT TYPE

The total number of Deals that fall within the Contract and Instrument type for the specified day.

TOTAL VALUE OF CONTRACTS PER CONTRACT AND INSTRUMENT TYPE

The total value of the Contracts that fall within the Contract and Instrument Type for the specified day.

TOTAL OPEN INTEREST PER CONTRACT AND INSTRUMENT TYPE

The total amount of Open Interest that fall within the Contract and Instrument Type for the specified day.

FILLER

To cater for future expansion

## 7.4 Daily Traded Overall Totals - OIR Sub Type 01

The daily overall market totals are calculated at the close of each trading day. The record contains the key market statistics for the day's trade. It provides a view of the day's trade at a glance.

All the daily overall market totals fall within record type **OIR**, and the relevant field layouts are listed below

FIELD NAME	START POS	LENGTH	DATA TYPE	NUMERIC FORMATS	END POS
Total number of contracts for day	49	14	N (I)	14	62
Total number of Deals for day	63	14	N (I)	14	76
Total Value of contracts for day	77	21	N	14.6	97
Total Open Interest for day	98	14	N (I)	14	111
Filler	112	51	A		162

### FIELD DESCRIPTIONS:

TOTAL NUMBER OF CONTRACTS FOR DAY	The overall total number of Contracts for the specified day.
TOTAL NUMBER OF DEALS FOR DAY	The overall total number of Deals for the specified day.
TOTAL VALUE OF CONTRACTS FOR DAY	The total value of the Contracts for the specified day.
TOTAL OPEN INTEREST FOR DAY	The total amount of Open Interest for the specified day.
FILLER	To cater for future expansion

## 7.5 Daily Full Market Statistics - DIR Sub Type 02

The Daily Full Market Statistics record contains all the contracts for the IRC market, irrespective of whether they were traded or not.

FIELD NAME	START POS	LENGTH	DATA TYPE	NUMERIC FORMATS	END POS
Instrument	49	4	A		52
Date	53	8	DATE		60
Strike Price	61	17	N	10.6	77
Option Type	78	1	A		78
Traded Indicator	79	1	B		79
Spot Price	80	17	N	10.6	96
Closing Bid	97	17	N	10.6	113
Closing Offer	114	17	N	10.6	130
MTM	131	17	N	10.6	147
First Price	148	17	N	10.6	164
Last Price	165	17	N	10.6	181
High Price	182	17	N	10.6	198
Low Price	199	17	N	10.6	215
Number of deals	216	14	N (I)	14	229
Volume	230	14	N (I)	14	243
Value Traded	244	21	N	14.6	264
Open Interest	265	14	N (I)	14	278
Volatility	279	11	N	4.6	289
Filler	290	51	A		340

### FIELD DESCRIPTIONS:

#### INSTRUMENT

**Instrument** refers to the underlying instrument that the contract is written on.

#### DATE

The **Date** refers to the expiry date or valuation date of the individual contract.

#### STRIKE PRICE

The **Strike Price** is the price at which the buyer/holder of an option has the right to buy/sell the underlying future.

For Futures, the strike price will zero whereas for Options, the strike price will be the strike value of the option

#### OPTION TYPE

An option can be a Put or a Call.

#### TRADED INDICATOR

This indicates if the contract was traded on the specified day.

#### SPOT PRICE

The closing price of the underlying instrument.

#### CLOSING BID

The closing price at which a market participant is willing to buy.

CLOSING OFFER	The closing price at which a market participant is willing to sell.
MTM	The official closing price as determined by the Exchange
FIRST PRICE	The first execution price of a trade the specified day.
LAST PRICE	The last execution price of a trade the specified day.
HIGH PRICE	The highest execution price of a trade on the specified day.
LOW PRICE	The lowest execution price of a trade on the specified day.
NUMBER OF DEALS	The total number of deals traded on the specified day.
VOLUME TRADED	The total number of contracts traded on the specified day.
VALUE TRADED	The total value of the contracts traded on the specified day.
OPEN INTEREST	The amount of open interest on the specified contract
VOLATILITY	The extent to which the return of the underlying asset will fluctuate between now and the option's expiration. Only applicable to Options.
FILLER	To cater for future expansion

## 7.6 Daily Full Market Type Totals - SIR Sub Type 02

All contracts traded on the market are grouped according to the type of contract. The totals for each grouping are calculated at the close of trading each day.

All the daily type totals fall within record type **SIR**. The statistics are grouped into various sub types, which allows you to select the type of information you require. The different sub types and the relevant field layouts are listed.

FIELD NAME	START POS	LENGTH	DATA TYPE	NUMERIC FORMATS	END POS
Total number of contracts per Contract and Instrument Type	49	14	N (I)	14	62
Total number of Deals per Contract and Instrument Type	63	14	N (I)	14	76
Total Value of contracts per Contract and Instrument Type	77	21	N	14.6	97
Total Open Interest per Contract and Instrument Type	98	14	N (I)	14	111
Filler	112	51	A		162

### FIELD DESCRIPTIONS:

TOTAL NUMBER OF CONTRACTS PER CONTRACT AND INSTRUMENT TYPE

The total number of Contracts that fall within the Contract and Instrument type for the specified day.

TOTAL NUMBER OF DEALS PER CONTRACT AND INSTRUMENT TYPE

The total number of Deals that fall within the Contract and Instrument type for the specified day.

TOTAL VALUE OF CONTRACTS PER CONTRACT AND INSTRUMENT TYPE

The total value of the Contracts that fall within the Contract and Instrument Type for the specified day.

TOTAL OPEN INTEREST PER CONTRACT AND INSTRUMENT TYPE

The total amount of Open Interest that fall within the Contract and Instrument Type for the specified day.

FILLER

To cater for future expansion



## 7.7 Daily Full Market Overall Totals - OIR Sub Type 02

The daily overall market totals are calculated at the close of each trading day. The record contains the key market statistics for the day's trade. It provides a view of the day's trade at a glance.

All the daily overall market totals fall within record type **OIR**, and the relevant field layouts are listed below

FIELD NAME	START POS	LENGTH	FORMAT	NUMERIC FORMATS	END POS
Total number of contracts for day	49	14	N (I)	14	62
Total number of Deals for day	63	14	N (I)	14	76
Total Value of contracts for day	77	21	N	14.6	97
Total Open Interest for day	98	14	N (I)	14	111
Total Margin on Deposit	112	21	N	14.6	132
Filler	133	51	A		183

### FIELD DESCRIPTIONS:

TOTAL NUMBER OF CONTRACTS FOR DAY	The overall total number of Contracts for the specified day.
TOTAL NUMBER OF DEALS FOR DAY	The overall total number of Deals for the specified day.
TOTAL VALUE OF CONTRACTS FOR DAY	The total value of the Contracts for the specified day.
TOTAL OPEN INTEREST FOR DAY	The total amount of Open Interest for the specified day.
TOTAL MARGIN ON DEPOSIT	The total amount of margin of deposit for the specified day.
FILLER	To cater for future expansion

## 7.8 Mark to Market – MIR Sub Type 01

The closing Mark-to-Market value is calculated at the end of the day by the exchange.

FIELD NAME	START POS	LENGTH	DATA TYPE	NUMERIC FORMATS	END POS
Instrument	49	4	A		52
Date	53	8	DATE		60
Strike Price	61	17	N	10.6	77
Option Type	78	1	A		78
Spot Price	79	17	N	10.6	95
Closing Bid	96	17	N	10.6	112
Closing Offer	113	17	N	10.6	129
MTM	130	17	N	10.6	146
High Price	147	17	N	10.6	163
Low Price	164	17	N	10.6	180
Volume	181	14	N (I)	14	194
Open Interest	195	14	N (I)	14	208
Volatility	209	11	N	4.6	219
Filler	220	51	A		270

### FIELD DESCRIPTIONS:

INSTRUMENT

**Instrument** refers to the underlying instrument that the contract is written on.

DATE

The **Date** refers to the expiry date or valuation date of the individual contract.

STRIKE PRICE

The **Strike Price** is the price at which the buyer/holder of an option has the right to buy/sell the underlying future.

For Futures, the strike price will zero whereas for Options, the strike price will be the strike value of the option

OPTION TYPE

An option can be a Put or a Call.

SPOT PRICE

The latest trading price of the underlying share or index

CLOSING BID

The closing price at which a market participant is willing to buy.

CLOSING OFFER

The closing price at which a market participant is willing to sell.

MTM

The official closing price as determined by the Exchange

HIGH PRICE

The highest execution price of a trade on the specified day.

LOW PRICE

The lowest execution price of a trade on the specified day.

VOLUME TRADED	The number of contracts traded on the day
OPEN INTEREST	The total number of futures contracts or option contracts that have not yet been exercised, expired, or fulfilled by delivery
VOLATILITY	The extent to which the return of the underlying asset will fluctuate between now and the option's expiration. Only applicable to Options.
FILLER	To cater for future expansion

**7.9 Interest Rates - RIR Sub Type 01**

This record presents the various rates that are relevant to the market.

FIELD NAME	START POS	LENGTH	DATA TYPE	NUMERIC FORMATS	END POS
Interest on Initial Margin	49	11	N	4.6	59
Filler	60	51	A		110

**FIELD DESCRIPTIONS:**

INTEREST ON INITIAL MARGIN

The interest earned on the amount of money determined by the clearing house on the basis specified by the JSE and held in respect of the aggregate position of a derivatives member or a client.

FILLER

To cater for future expansion