

# **Integrated Trading and Clearing (ITaC)**

## **Guidance Note**

### **Positions Take On for the Equity Derivative and Currency Derivative Markets**

**Version**

3.0

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# **1 Introduction**

## **1.1 Background**

As part of the strategic integrated trading and clearing vision set out in 2012, the Johannesburg Stock Exchange (JSE) has embarked on designing and planning the new Information Technology (IT) and business landscapes that would deliver this vision. A formal Integrated Trading and Clearing (ITaC) programme was kicked off by the JSE to implement an integrated Trading and Clearing solution across all markets i.e. Equity, Bonds and Derivatives.

## **1.2 Purpose of Document**

The intention of this Guidance Note is to provide a detailed explanation of how the closing positions for all instruments across all Members are migrated from the current Nuclears / Nutron solution to the new ITaC Real-Time Clearing (RTC) system on Go Live of ITaC Project (1b and 1c).

## **1.3 Scope**

### **In-Scope:**

- a) The migration of positions for the Equity Derivatives and Currency Derivatives instruments from Nuclears / Nutron to the Real Time Clearing solution (RTC)

## 2 Data Take On Process

### 2.1 Pre-Requisites for the Take-on of Positions

The following data must exist in the JSE's Master Data System (MDS) and RTC prior to taking on the closing positions:

- All Clearing Members, Trading Members and Branches must be aligned between MDS and RTC
- All instruments that have a closing position must exist on MDS and must be aligned to RTC
- All Member Clients must be created on RTC and mastered on MDS
- All Member Clients must be linked to the Clearing Member across the two different markets on RTC
- All Position Accounts must be created on RTC and mastered in MDS

### 2.2 Business Rules Applied to the Dividend Future Contracts that are being converted to Dividend Neutral Contracts

There are two types of Dividend Future contracts that are impacted:

- Single Stock Dividend Futures; and
- International Equity Dividend Futures

The following business rules have been applied to **Single Stock Dividend Futures**:

- These contracts are created as Physically Settled Dividend Neutral contracts in MDS
- The exception to this will be for Dividend Neutral Futures that have a corresponding Cash Settled Dividend Future contract.

The following business rule has been applied to **International Equity Dividend Futures**:

- These contracts are created as Cash Settled Dividend Neutral contracts in MDS

## 2.3 Process for the Take On of Positions

The table below provides a high-level overview of the process that will be followed to migrate the positions across the Equity Derivatives and Currency Derivatives markets from Nuclears / Nutron to RTC:

ID	Process Step	Description
1	Map the new ID's for reference data	<ul style="list-style-type: none"> <li>Map the current ID's in Nuclears / Nutron to the Production Identifier Code for Trading Members and Clearing Members, or the MDS unique ID for Branches and Member Clients from the JSE's Master Data System (MDS)</li> <li>Map the current instrument ID's in Nuclears / Nutron to the Universal Master ID's from the JSE's Master Data System (MDS)</li> <li>A mapping spreadsheet will be provided on the Friday night prior to a Mandatory Market-facing Dress Rehearsal or the Go Live weekend, together with the Closing Price for the individual instruments. Refer Annexure 1 for the file layout with sample data</li> </ul>
2	Roll Up All Balances	<ul style="list-style-type: none"> <li>The Closing Positions reflected in Nuclears / Nutron are currently saved to the database up to a Dealer level. During this step all closing balances are rolled up to the following level: <ul style="list-style-type: none"> <li>Clearing Member</li> <li>Trading Member (or Branch)</li> <li>Member Client</li> <li>External Account ID (Position Account ID)</li> <li>Instrument ID</li> <li>Instrument Expiry Date</li> <li>Instrument Strike Price</li> <li>Instrument Call / Put</li> </ul> </li> </ul>
3	Calculate the revised positions for Dividend Futures and convert to Dividend Neutral contracts	<ul style="list-style-type: none"> <li>A Dividend Neutral Future is a virtual contract in Nuclears / Nutron. When trading a Dividend Neutral Future in Nuclears today, you will receive an SSF and a DIVF in the same quantity. With the Go Live of ITaC Project 1b and c, all virtual Dividend Neutral Futures in Nuclears / Nutron will be converted to actual Dividend Neutrals in the new Reference Data system.</li> </ul>
4	Calculate the Market Value for all open positions	<ul style="list-style-type: none"> <li>Based on the Closing Position and closing price as at the last trading day before Go Live (or a Dress Rehearsal), calculate the Market Value and Initial Value. These values will become the Open Position on RTC when markets open on Day 1 of ITaC Go Live</li> </ul>

## 2.4 Conversion of the Dividend Neutral Futures to Dividend Neutrals

The current Nuclears / Nutron solution makes provision for virtual contracts called Dividend Neutral Futures (suffixed by an 'N' in the Short Name on the new Reference Data System, e.g. "RDFN") and International Equity Dividend Neutral Futures. These virtual contracts are stored as 2 records in the Nuclears database – one on the Dividend Future and one on the SSF / International Equity Dividend future, as reflected in the example below:

Clearing Member	Trading Member	Member Client	Position Account	Instrument ID	Expiry Date	Short Name	Notes	Closing Position
ABC	DEF	ABC101	ABC101	1011169	21-06-2018	RDFN	Dividend Future	-1740
ABC	DEF	ABC101	ABC101	1010284	21-06-2018	RDFQ	Single Stock Future	-1740

There are three possible scenarios when converting the Nuclears Dividend Neutral Futures to the ITaC Dividend Neutrals:

1. An 'F' contract (Dividend Future) is matched to a 'Q' contract (Physically Settled Single Stock Future) only
2. An 'F' contract (Dividend Future) is matched to an 'S' contract (Cash Settled Single Stock Future) only OR, in the case of the International Equity Dividend Neutral Future, a 'D' contract (Dividend Future) is matched to a 'G' contract (Cash Settled International Equity Future)
3. An 'F' contract (Dividend Future) is matched to a 'Q' contract and an 'S' contract

### 2.4.1 Data Conversion Process

The following process is undertaken when converting the Dividend Neutral Future to the Dividend Neutral:

1. Migrate all 'Q' and 'S' positions to RTC
2. Match the 'F' Contract (Dividend Future) to the 'Q' contract (Physically Settled Single Stock Future):
  - a. If the quantity of the Dividend Future is less than or equal to the quantity of the Physically Settled Single Stock Future then migrate the Dividend Neutral using the quantity of the Dividend Future (Scenario 1 above) as a **Physically Settled Dividend Neutral**
  - b. If the quantity of the Dividend Future is greater than the quantity of the Physically Settled Single Stock Future, then update the Quantity of the Dividend Future to that of the Physically Settled Single Stock Future. The difference is then "reserved" so that a comparison to a Cash Settled Single Stock Future can be done (Scenario 3 above)
3. Create a contra transaction against the 'Q' contract
4. Match the 'F' Contract (Dividend Future) to the 'S' contract (Cash Settled Single Stock Future):
  - a. If the quantity of the Dividend Future is less than or equal to the quantity of the Cash Settled Single Stock Future then migrate the Dividend Neutral using the quantity of the Dividend Future (Scenario 2 above) as a **Cash Settled Dividend Neutral**
  - b. If the quantity of the Dividend Future is greater than the quantity of the Cash Settled Single Stock Future, then update the Quantity of the Dividend Future to that of the Cash Settled Single Stock Future. The difference is then "reserved" so that the difference can be applied against the Physically Settled Single Stock Future (Scenario 3 above)
5. Create a contra transaction against the 'S' contract
6. Convert any balances in the 'F' contract to a Physically Settled Dividend Neutral
7. Create a contra transaction against the 'Q' contract

**Example 1 - An 'F' contract (Dividend Future) is matched to a 'Q' contract (Physically Settled Single Stock Future) only**

Clearing Member	Trading Member	Member Client	Position Account	Instrument ID	Expiry Date	Short Name	Notes	Closing Position
ABC	DEF	ABC101	ABC101	1011169	21-06-2018	RDF <b>F</b>	Dividend Future	800
ABC	DEF	ABC101	ABC101	1010284	21-06-2018	RDF <b>Q</b>	Physically Settled Single Stock Future	1000

Step	Pre Conversion			Post Conversion		
	<b>F</b>	<b>Q</b>	<b>S</b>	Physically Settled Dividend Neutral	<b>Q</b>	<b>S</b>
0 – Starting Point	800	1000	0			
1 – Migrate 'Q' and 'S' positions		1000	0		1000	0
	<b>Total F Qty</b>	<b>F:Q Qty</b>	<b>F:S Qty</b>	Physically Settled Dividend Neutral	<b>Q</b>	<b>S</b>
2a – 'F' to 'Q' match	800	800	0	800		
3 – Create a contra transaction 'Q'	800	-800	0		-800	
<b>NET POSITION</b>	<b>800</b>	<b>200</b>		<b>800</b>	<b>200</b>	

**Example 2 - An 'F' contract (Dividend Future) is matched to an 'S' contract (Cash Settled Single Stock Future) only**

Clearing Member	Trading Member	Member Client	Position Account	Instrument ID	Expiry Date	Short Name	Notes	Closing Position
ABC	DEF	ABC101	ABC101	1011169	21-06-2018	RDF <b>F</b>	Dividend Future	1200
ABC	DEF	ABC101	ABC101	1010385	21-06-2018	RDF <b>S</b>	Cash Settled Single Stock Future	1200

Step	Pre Conversion			Post Conversion		
	F	Q	S	Cash Settled Dividend Neutral	Q	S
0 – Starting Point	1200	0	1200			
1 – Migrate 'Q' and 'S' positions			1200		0	1200
	Total F Qty	F:Q Qty	F:S Qty	Cash Settled Dividend Neutral	Q	S
4a – 'F' to 'S' match	1200	0	1200	1200		
5 – Create a contra transaction 'S'			-1200			-1200
<b>NET POSITION</b>	<b>1200</b>	<b>0</b>	<b>0</b>	<b>1200</b>	<b>0</b>	<b>0</b>



**Example 3 - An 'F' contract (Dividend Future) is matched to a 'Q' contract and an 'S' contract**

Clearing Member	Trading Member	Member Client	Position Account	Instrument ID	Expiry Date	Short Name	Notes	Closing Position
ABC	DEF	ABC101	ABC101	1011169	21-06-2018	RDF <b>F</b>	Dividend Future	1600
ABC	DEF	ABC101	ABC101	1010284	21-06-2018	RDF <b>Q</b>	Physically Settled Single Stock Future	900
ABC	DEF	ABC101	ABC101	1010385	21-06-2018	RDF <b>S</b>	Cash Settled Single Stock Future	400

Step	Pre Conversion			Post Conversion			
	F	Q	S	Physically Settled Dividend Neutral	Cash Settled Dividend Neutral	Q	S
0 – Starting Point	1600	900	400				
1 – Migrate 'Q' and 'S' positions		900	400			900	400
	Total F Qty	F:Q Qty	F:S Qty	Physically Settled Dividend Neutral	Cash Settled Dividend Neutral	Q	S
2b – 'F' to 'Q' match	1600	900	700	900			
3 – Create a contra transaction 'Q'		-900				-900	
	Total F Qty	F:Q Qty	F:S Qty	Physically Settled Dividend Neutral	Cash Settled Dividend Neutral	Q	S
4b – 'F' to 'S' match	1600		400*		400		
5 – Create a contra transaction 'S'			-400				-400
	Total F Qty	F:Q Qty	F:S Qty	Physically Settled Dividend Neutral	Cash Settled Dividend Neutral	Q	S
6 – Convert balance against Physically Settled Div Neutral contracts	1600	300**		300			
7 – Create a contra transaction 'Q'		-300				-300	
<b>NET POSITION</b>	<b>1600</b>	<b>0</b>	<b>0</b>	<b>1200</b>	<b>400</b>	<b>-300</b>	<b>0</b>

Note:

\* The quantity on the 'S' contract is updated to 400 as the 'S' quantity was 400

\*\* The quantity of the 'Q' contract is updated to 300 because:

- There were 700 units left to compare against the 'S' contract in Step 4
- Because the 'S' contract only had 400 units, the Quantity is updated to 400 for conversion
- The difference of 300 is then allocated against the 'Q' contract

## 2.5 Calculation of Market Value and Initial Value

The Market Value and the Initial Value are calculated based on the following formula:

For Dividend Neutral Futures:  $\text{Closing Position} \times (\text{Closing Price of the Dividend Future} + \text{Closing Price of Single Stock Future}) \times \text{Contract Size}$

For Futures:  $\text{Closing Position} \times \text{Closing Price} \times \text{Contract Size}$

For Options:  $\text{Closing Position} \times \text{Closing Price}$

The Closing Price will be derived from the Valuation System on the Friday night prior to Go Live; if Go Live is 14 May 2018, positions will be taken on into the Clearing system on the night of 11 May 2018 based on the closing position and price for the 11<sup>th</sup> of May.

### 3 Annexure 1 – Closing Price File Layout

NUC.IdStrike	NUC.IdContractDate	NUC.IdInstrument	NUC.ExpiryDate	NUC.ShortName	NUC.CallPut	NUC.StrikePrice	NUC.CashOrPhysical	NUC.Price	NUC.Volatility	NUC.Delta	MDS.UniversalInstrumentMasterId	MDS.DerivativeInstrumentContractDescription
551914	49246	579	21/06/2018 00:00	MTNQ	C	141.47	2	178	31.43	0.221	1020574	MTN Single Stock Physical Base 100
551915	49246	579	21/06/2018 00:00	MTNQ	C	112.53	2	1732	35.32	0.8639	1020575	MTN Single Stock Physical Base 100
552124	48085	77	20/09/2018 00:00	ALSI	C	57000	1	3180	15.25	0.1356	1020578	ALSI Index Cash Base 10
552126	48085	77	20/09/2018 00:00	ALSI	C	63000	1	147	14.19	0.01	1020580	ALSI Index Cash Base 10
552153	49246	579	21/06/2018 00:00	MTNQ	C	140	2	210	31.61	0.2503	1020583	MTN Single Stock Physical Base 100
552231	45622	77	21/06/2018 00:00	ALSI	C	47200	1	38770	19.18	0.8612	1020585	ALSI Index Cash Base 10
552245	49995	4965	21/06/2018 00:00	DCAP	C	18110	1	5156	17.38	0.5487	1020587	DCAP Index Cash Base 10
552250	49995	4965	21/06/2018 00:00	DCAP	P	18120	1	4153	17.37	0.4547	1020590	DCAP Index Cash Base 10
552253	49995	4965	21/06/2018 00:00	DCAP	C	18100	1	5211	17.39	0.5521	1020591	DCAP Index Cash Base 10
552260	49995	4965	21/06/2018 00:00	DCAP	P	17940	1	3404	17.6	0.3944	1020594	DCAP Index Cash Base 10
552262	48085	77	20/09/2018 00:00	ALSI	P	42400	1	2289	21.64	0.0713	1020596	ALSI Index Cash Base 10
552264	48085	77	20/09/2018 00:00	ALSI	P	49900	1	16863	18.07	0.3912	1020598	ALSI Index Cash Base 10
552322	50007	1041	21/06/2018 00:00	ALMI	P	50500	1	1126	17.26	0.4481	1020602	ALMI Index Cash Mini 1
552325	50008	283	21/06/2018 00:00	CTOP	C	26300	1	10020	17.64	0.6402	1020603	CTOP Index Cash Base 10
552326	50008	283	21/06/2018 00:00	CTOP	P	26300	1	4410	17.64	0.3598	1020604	CTOP Index Cash Base 10
552329	50009	5025	21/06/2018 00:00	DTOR	C	18200.18	1	6496	17.66	0.6179	1020605	DTOR Index Cash Base 10
552334	50010	1768	21/06/2018 00:00	ETOP	P	24990	1	8078	16.95	0.5787	1020608	ETOP Index Cash Base 10
552337	50011	362	21/06/2018 00:00	FINI	C	15600	1	19979	22.92	0.9254	1020609	FINI Index Cash Base 10
552346	50013	1565	21/06/2018 00:00	GERE	P	6850	1	22	23.73	0.0086	1020614	GERE Index Cash Base 10
552349	50014	449	21/06/2018 00:00	INDI	C	76350	1	11064	17.45	0.3556	1020615	INDI Index Cash Base 10
552354	50015	2896	21/06/2018 00:00	MXZA	P	1450	1	5627	20	0.5833	1020618	MXZA Index Cash Base 100
552357	50016	727	21/06/2018 00:00	RESI	C	36200	1	33894	38.76	0.6865	1020619	RESI Index Cash Base 10
552406	48131	620	21/06/2018 00:00	NPNQ	C	3700	2	138	29.04	0.0132	1020622	NPN Single Stock Physical Base 100
552411	49995	4965	21/06/2018 00:00	DCAP	C	17870	1	6587	17.68	0.6283	1020623	DCAP Index Cash Base 10
552412	49995	4965	21/06/2018 00:00	DCAP	P	17870	1	3139	17.68	0.3717	1020624	DCAP Index Cash Base 10
552438	50022	3442	15/05/2018 00:00	ALSX	P	49642.75	1	2752	17	0.2806	1020626	ALSX Index AnyDay Cash Base 10
552441	50022	3442	15/05/2018 00:00	ALSX	C	49642.76	1	11483	17	0.7194	1020627	ALSX Index AnyDay Cash Base 10
552446	50022	3442	15/05/2018 00:00	ALSX	P	49642.74	1	2752	17	0.2806	1020630	ALSX Index AnyDay Cash Base 10
552457	50022	3442	15/05/2018 00:00	ALSX	C	39714.2	1	108017	17	1	1020631	ALSX Index AnyDay Cash Base 10
552460	50022	3442	15/05/2018 00:00	ALSX	P	47160.61	1	67	17	0.0124	1020634	ALSX Index AnyDay Cash Base 10
552462	50022	3442	15/05/2018 00:00	ALSX	C	54607.03	1	30	17	0.006	1020636	ALSX Index AnyDay Cash Base 10

Note:

- NUC CashOrPhysical:
  - 1 = Cash Settled
  - 2 = Physically Settled