

**NIP COMPILED TEST PROCEDURE DOCUMENT**

**FOR**

**NIBSS NIP INTEGRATION v. 2.1**

Prepared by:

Nigeria Inter – Bank Settlement System (NIBSS)

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**Technical Data**

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**TEST PROCEDURE FOR NIP TEST**

|  |  |
| --- | --- |
| **Start Date** | *This document captures the step by step procedure NIBSS Certification team will take during NIP Tests that will be carried out.* |
| **Start Date** |  |
| **End Date** |  |
| **Status** |  |
| **Time Schedule** |  |

**CONTENT**

## **PROCEDURE FOR OUTWARD TEST**

## **PROCEDURE FOR INWARD TEST**

## **PROCEDURE FOR STRESS TEST**

**TEST DATA (OUTWARD)**

**This is NIBSS Test details for your OUTWARD Test**

|  |  |
| --- | --- |
| Destination Institution Code |  |
| Account Name |  |
| Account Number |  |
|  |  |

**TEST DATA (INWARD)**

**To be provided by the client**

|  |  |
| --- | --- |
| Destination Institution Code |  |
| Account Name |  |
| Account Number |  |

# **A) PROCEDURE FOR OUTWARD TEST**

## Client should send only three (3) transactions namely Name Enquiry, Funds Transfer and transaction status query.

## **EXPECTED RESPONSE**

**1. FOR NAME ENQUIRY**

* CONFIRM THE REQUESTS MATCHES EXPECTED ACCORDING TO TECHNICAL SPECIFICATION
* CONFIRM THAT SESSION ID IS 30 CHARACTERS IN LENGTH – IN THE FORMAT  
  Char 1 – 6: Senders Financial Institution’s code

Char 7 – 18: Date and time (in the format yymmddHHmmss – HH is 24 hour clock)

Char 19 – 30: 12 – character unique number (either serial # or random number)

1. **Name Enquiry Test evidence**

**Paste the Request and Response for the NE Transaction you initiated.**

* 1. **Request**
  2. **Response**

**2. FOR FUNDS TRANSFER (CREDIT)**

* CONFIRM THAT THE REQUESTS MATCHES AS EXPECTED ACCORDING TO TECHNICAL SPECS
* CONFIRM THAT AMOUNT BEING SENT BY CLIENT IS IN TWO DECIMAL PLACES ONLY WITHOUT ANY NON-NUMERIC CHARACTERS
* CONFIRM THAT THE NAME ENQUIRY REFERENCE BEING SENT IN FT DIRECT CREDIT IS SAME AS THE ONE USED IN NAME ENQUIRY
* CONFIRM THAT A TSQUERY IS ALWAYS SENT TO VALIDATE THE FINAL STATUS OF TRANSACTION AFTER AN FT CREDIT RESPONSE IS RECEIVED FROM NIBSS
* CONFIRM THAT A TSQUERY IS ALWAYS SENT TO VALIDATE THE FINAL STATUS OF TRANSACTION WHEN AN FT CREDIT RESPONSE IS NOT RECEIVED FROM NIBSS.

1. **FT Direct Credit Test Evidence**

**2A: Send FT Direct Credit of 1,000 Naira**

**Paste the Request and Response for the FT Transaction you initiated.**

* 1. **Request**
  2. **Response**

**2B: Send FT Direct Credit of 1,100,000,000 Naira.**

**Paste the Request and Response for the FT Transaction you initiated.**

1. **Request**
2. **Response**

**2C.** SEND FUNDS TRANSFER CREDIT TRANSACTION WITH AMOUNT AS **0 NAIRA**

**Expected: Transaction shouldn’t go through. It should fail with Response code 13 – Invalid Amount**

**2D.** SEND FUNDS TRANSFER CREDIT TRANSACTION WITH AMOUNT AS **-45,000 NAIRA**

**Expected: Transaction shouldn’t go through. It should fail with Response code 13 – Invalid Amount**

**2E.** SEND FUNDS TRANSFER CREDIT TRANSACTION WITH NARRATION AS **“ This is TO Nigeria Interbank Settlement System Plc Inward Clearing to this account to check transaction narration without special characters verification End of Narration text” LENGTH OF NARRATION IS MAX 100**

**2F.** SEND FUNDS TRANSFER CREDIT TRANSACTION WITH NARRATION AS **“This is FROM NIBSS | Plc !@#$%^&\*(GROUP)\_-+={[LIMITED]}|Outward, to this account/><”” CHECK FOR MORE SPECIAL CHARACTERS**

**3. FOR TRANSACTION STATUS QUERY**

* CONFIRM THE REQUESTS MATCHES EXPECTED ACCORDING TO TECHNICAL SPECIFICATION

**TS Query Test Evidence  
Paste the Request and Response for the TSQ Transaction you initiated.**

1. **Request**
2. **Response**

**B) PROCEDURE FOR INWARD TEST**

# **NAME ENQUIRY (NE)**

## **SEND NE REQUEST**

EXPECTED RESPONSE: **RESPONSE CODE 00 – SUCCESSFUL. ACCOUNT NAME, BVN AND KYC LEVEL MUST BE RETURNED**

# **MANDATE ADVICE (MA)**

## SEND MA OF ANOTHER AMOUNT E.G. 1000 FOR A SPECIFIC MANDATE REFERENCE NO E.G. REF/CONTEC/1k

EXPECTED RESPONSE: **RESPONSE CODE 00 – FOR AMOUNT 1000 AND REFERENCE - REF/CONTEC/101000**

## SEND MA OF A SPECIFIC AMOUNT E.G. 2000 FOR A NEW MANDATE REFERENCE NO E.G. REF/CONTEC/2k

EXPECTED RESPONSE: **RESPONSE CODE 00 – FOR AMOUNT 2000 AND REFERENCE - REF/** **CONTEC/002**

## RESEND MA OF THE SAME AMOUNT ABOVE or ANY AMOUNT E.G. 2000 FOR A MANDATE REFERENCE ALREADY USED NO E.G. REF/CONTEC/002

EXPECTED RESPONSE: **RESPONSE CODE 94 – DUPLICATE TRANSACTION - REF/** **CONTEC/002**

# **BALANCE ENQUIRY (BE)**

## SEND BE USING AN INVALID OR NON EXISTING AUTHORIZATION CODE E.G. ref/CONTEC/3000X

EXPECTED RESPONSE**: RESPONSE CODE 05 – DO NOT HONOR AS EXPECTED**

## SEND BE USING ANY VALID AUTHORIZATION CODE WHICH WAS INITIATLLY SUBMITTED DURING MANDATE ADVICE ABOVE E.G. REF/001/102500

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, AVAILABLE BALANCE SHOULD BE RETURNED**

# **FUNDS TRANSFER -DIRECT CREDIT (FT CREDIT) -**

## SEND BALANCE ENQUIRY (BE) REQUEST TO CONFIRM THE AVAILABLE BALANCE ON THE ACCOUNT

EXPECTED RESPONSE**: BALANCE IS RETURNED, NOTE IT DOWN**

## SEND FT CREDIT OF A SPECIFIC AMOUNT TO THE ACCOUNT E.G. 1000.00

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL**

## SEND BALANCE ENQUIRY IMMEDIATELY **LESS THAN 30 SECONDS** LATER TO CONFIRM THE FT TRANSACTION AMOUNT DIDN’T IMPACT ON THE ACCOUNT

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, BALANCE SHOULD STILL BE THE SAME AS BEFORE BECAUSE TSQ WOULDN’T HAVE BEEN SENT BY YOU.**

**Wait for 60 Seconds…and Check that TSQ is sent**

**4ii. FOR TRANSACTION STATUS QUERY**

**The process flow will be: for Fund Transfer inflows to your bank (successful), TSQuery must be sent to NIBSS to ascertain the status before funds are released to the customer. This should be sent at least 60 seconds after FTResponse is sent by client to NIBSS. You may refer to the attached FT Credit Implementation View.png file for further clarification.**

1. CONFIRM TSQUERY IS SENT FOR EVERY FUND TRANSFER RESPONSE RETURNED.

## SEND BALANCE ENQUIRY TO CONFIRM IF THE FT TRANSACTION AMOUNT IMPACTED ON THE ACCOUNT

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, CURRENT BALANCE IS RETURNED, CONFIRM IF IT INCREASED BY THE FT AMOUNT JUST SENT**

1. SEND FUNDS TRANSFER CREDIT TRANSACTION WITH NARRATION AS **“Transaction from me &amp; you” ESCAPE SPECIAL CHARACTERS IN NARRATION FOR FUNDS TRANSFER**
2. SEND FUNDS TRANSFER CREDIT TRANSACTION WITH NARRATION AS **“Étienne Gaël Océane Aimée” ESCAPE SPECIAL CHARACTERS IN NARRATION FOR FUNDS TRANSFER**
3. SEND FUNDS TRANSFER CREDIT TRANSACTION WITH NARRATION AS **“ This is FROM Nigeria Interbank Settlement System Plc Inward Clearing to this account to check transaction narration without special characters verification End of Narration text” LENGTH OF NARRATION IS MAX 100**
4. SEND FUNDS TRANSFER CREDIT TRANSACTION WITH AMOUNT AS **0 NAIRA**

**Expected: Transaction shouldn’t go through. It should fail with Response code 13 – Invalid Amount**

1. SEND FUNDS TRANSFER CREDIT TRANSACTION WITH AMOUNT AS **-45,000 NAIRA**

**Expected: Transaction shouldn’t go through. It should fail with Response code 13 – Invalid Amount**

1. SEND FUNDS TRANSFER CREDIT TRANSACTION WITH AMOUNT AS **1,100,000,000 NAIRA where Transfer Limit for Customer (e.g. NOVA on ConfigData) is less than the figure (e.g. 1,100,0000,000)**

**Expected: Transaction shouldn’t go through. It should fail with Response code 61 – Transaction Limit exceeded**

1. SEND FUNDS TRANSFER CREDIT TRANSACTION WITH NARRATION AS **“This is FROM NIBSS | Plc !@#$%^&\*(GROUP)\_-+={[LIMITED]}|Outward, to this account/><”” CHECK FOR MORE SPECIAL CHARACTERS**

# **FUNDS TRANSFER ADVICE (DIRECT CREDIT)**

## Do Balance Enquiry to confirm balance

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, BALANCE IS RETURNED**

## Do FT Credit of a specific amount e.g. 2000.00

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, ACCOUNT BALANCE SHOULD HAVE INCREASED BY THE AMOUNT**

## Do Balance Enquiry again to confirm credit impacted

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, BALANCE INCREASED**

## Do FT Credit Advice with invalid session id (different from the one used for the previous FT Credit transaction), this should Fail.

EXPECTED RESPONSE**: RESPONSE CODE 15 – INVALID SESSION ID**

## Do FT Credit Advice with valid session id of FT transaction and with any amount to trigger reversal (NOT on the Amount Sent) but on the Amount of the original transaction tied on the Session ID.

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, EXPECTING THAT REVERSAL WOULD HAVE TAKEN PLACE ON THE AMOUNT TIED ON THE SESSION ID AND NOT ON THE AMOUNT SENT.**

## Check Balance again, it should be the same as Balance before FT

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, BALANCE INDICATES THAT REVERSAL TOOK PLACE**

## Check FT CREDIT ADVICE AGAIN, it shouldn’t be able to reverse the transaction again. EXPECTED RESPONSE**: RESPONSE CODE 21 – NO ACTION TAKEN**

## Check Balance again, it shouldn’t reduce

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, BALANCE INDICATES THAT REVERSAL TOOK PLACE**

# **FUNDS TRANSFER DIRECT DEBIT (FT DEBIT) -**

## SEND BALANCE ENQUIRY (BE) REQUEST TO CONFIRM THE AVAILABLE BALANCE ON THE ACCOUNT

EXPECTED RESPONSE**: BALANCE IS RETURNED, NOTE IT DOWN**

## DO AN FT DEBIT USING INVALID MANDATE REFERENCE CODE - ref/001/1XX

EXPECTED RESPONSE**: RESPONSE CODE 25 – UNABLE TO LOCATE RECORD**

## c. DO AN FT DEBIT USING VALID MANDATE REFERENCE CODE & AMOUNT **TIED** TO THE MANDATE [as already registered with client during mandate advice]

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL**

## SEND BALANCE ENQUIRY (BE) REQUEST TO CONFIRM THE AVAILABLE BALANCE ON THE ACCOUNT HAS DECREASED BY **THE AMOUNT SENT + TRANSACTION FEE**

EXPECTED RESPONSE**: BALANCE IS RETURNED, NOTE IT DOWN**

## DO AN FT DEBIT USING VALID MANDATE REFERENCE CODE & AMOUNT **LESS THAN** WHAT WAS INITIALLY REGISTERED DURING MANDATE ADVICE

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL**

## SEND BALANCE ENQUIRY (BE) REQUEST TO CONFIRM THE AVAILABLE BALANCE ON THE ACCOUNT HAS DECREASED BY **THE AMOUNT SENT + TRANSACTION FEE**

EXPECTED RESPONSE**: BALANCE IS RETURNED, AND IT IS CORRECT**

## DO AN FT DEBIT USING VALID MANDATE REFERENCE CODE & AMOUNT **GREATER** THAN WHAT WAS INITIALLY REGISTERED DURING MANDATE ADVICE

EXPECTED RESPONSE**: RESPONSE CODE 13 – INVALID AMOUNT**

# **FUNDS TRANSFER ADVICE (DIRECT DEBIT)**

## Do BE to confirm Current Balance

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, BALANCE IS RETURNED, NOTE IT DOWN**

## Do FT Debit using the valid mandate reference number e.g. REF/001/101000

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, CONFIRM THAT DEBIT OF AMOUNT TIED TO THE MANDATE REFERENCE PLUS THE FEE IS RETURNED (E.G 1000 NAIRA PLUS FEE AMOUNT IS DEBITED)**

## Check Balance to confirm if debit request impacted

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, BALANCE IS REDUCED BY THE TOTAL AMOUNT DEBITED (TRANSACTION AMOUNT + TRANSACTION FEE)**

## Do FT Debit Advice with a session id that doesn’t exist of FT Debit already done

EXPECTED RESPONSE**: RESPONSE CODE 15 – INVALID SESSION ID**

## Do FT Debit Advice with a session id of the initially sent FT Direct Debit transaction

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, REVERSAL TOOK PLACE**

**999999190611154752190611154752**

## Do BE to confirm reversal - Balance should reflect same available balance before the FT Debit transaction was done

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, BALANCE INDICATES THAT REVERSAL TOOK PLACE**

## Send FT DEBIT ADVICE AGAIN, it shouldn’t reverse the transaction again but rather let us know it’s already been acted on. EXPECTED RESPONSE**: RESPONSE CODE 21 – NO ACTION TAKEN**

# **AMOUNT BLOCK/UNBLOCK**

## Check Balance Enquiry (BE) to confirm balance

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, BALANCE ENQUIRY RETURNED**

## Send Amount Block for an amount that is less than the Available Balance on Account.

## EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, AMOUNT IS BLOCKED**

## Check BE again to confirm balance - Balance should be **less the blocked amount**

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, BALANCE IS RETURNED REFLECTING ONLY THE UNBLOCKED AMOUNT**

## Try FT Debit of amount greater than Available Balance (This is to confirm that the Amount Blocked is actually functional), it should fail with not sufficient funds – error code 51

EXPECTED RESPONSE**: RESPONSE CODE 51 – NOT SUFFICIENT FUNDS**

## Do Partial AmountUnblock with the valid AmountBlock ReferenceCode but for amount less than the total amount blocked

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL AMOUNT UNBLOCKED**

1. Try BE again, Balance should be increased by the unblocked amount in our example

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL – BALANCE IS REFLECTING THE UNBLOCKED AMOUNT**

## Then Try unblocking with ReferenceCode for **amount greater than** the remaining blocked amount, this should fail with error 70 – Unsuccessful Account/Amount Unblock because amount is greater than remainder which is 50000.00 in our example.

EXPECTED RESPONSE**: RESPONSE CODE 70 – UNSUCCESSFUL ACCOUNT/AMOUNT UNBLOCK**

## Send AMOUNT UNBLOCK request with **Wrong ReferenceCode** for valid amount (pending unblocked amount), it should also fail with error 70 – Unsuccessful Account/Amount Unblock

EXPECTED RESPONSE**: RESPONSE CODE 70 – UNSUCCESSFUL ACCOUNT/AMOUNT UNBLOCK**

## Then try unblocking with **Valid ReferenceCode** for valid amount, this should unblock successfully the remaining balance

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL - AMOUNT UNBLOCK IS COMPLETED**

## Check BE again, Balance should now be as before the block

## EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, BALANCE REFLECTS FULL AMOUNT UNBLOCK**

## 

1. **Check that an Amount Block Reference Code is always unique. If it has been used before, it should return Error Code: 69 Unsuccessful Amount/Account Block**

1. **Check that once an Amount Unblock has been done successfully, further amount unblock with the same reference returns Error Code: 69 Unsuccessful Amount/Account Unblock**

# **ACCOUNT BLOCK/UNBLOCK**

## Do BE to confirm Current Balance on Account

## EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL, BALANCE REFLECTS DEBIT OF BOTH AMOUNT AND FEE**

## Do Account Block with ReferenceCode, it should be successful

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL ACCOUNT BLOCK**

## Do FT Credit of any amount, it should fail with 57 – Transaction not permitted to sender

EXPECTED RESPONSE**: RESPONSE CODE 57 – TRANSACTION NOT PERMITTED TO SENDER**

## Do FT Debit of an amount, it should fail with error 57

EXPECTED RESPONSE**: RESPONSE CODE 57 – TRANSACTION NOT PERMITTED TO SENDER**

## Do Account Unblock with **invalid** ReferenceCode, it should fail with error 70

EXPECTED RESPONSE**: RESPONSE CODE 70 – UNSUCCESSFUL ACCOUNT UNBLOCK**

## Do Account Unblock with **valid** ReferenceCode, it should be successful

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL ACCOUNT UNBLOCK**

1. Repeat FT Debit of amount, it should be successful

## EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL FUNDS TRANSFER – CREDIT**

## Do BE, Balance should reflect the FT

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL – BALANCE IS FINE**

## Repeat FT Credit of any amount to the account, it should now be successful

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL FUNDS TRANSFER – CREDIT**

## Do BE, Balance should reflect the FT

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL – BALANCE IS FINE**

1. **Check that an account block reference code is always unique. If it has been used before to BLOCK the ACCOUNT, it should return Error Code: 69 Unsuccessful Amount/Account Block**

1. **Check that once an Account Unblock has been done successfully, further account unblock to the ACCOUNT with the same reference returns Error Code: 69 Unsuccessful Amount/Account Unblock**

# **FINANCIAL INSTITUTION LIST**

## Send Financial Institution List Transaction

EXPECTED RESPONSE**: RESPONSE CODE 00 – SUCCESSFUL – NUMBER OF RECORDS TAG SHOULD REFLECT THE TOTAL NUMBER OF INSTITUTION LIST SENT**

**C) PROCEDURE FOR STRESS TEST**

**To test both the performance of the system and response time on Test bed as a minimum requirement for the actual NIP implementation on production.**

**Bench Mark is 2000 requests without failure. Apache JMeter 3.x is used for the Stress Test.**

* **As you proceed with the test increase the number of users/request to test and confirm the limits at which behavior of the system becomes abnormal (starts returning error rate greater than 0%) and record at the point whereby this happens.**
* **Also check for the average response time for each of this request**
* **Determine if client application passed or failed the stress test.**

**Reasons Why Stress Test Could Fail**

1. Processing speed is poor
2. Connection pull setting is not configured to cater for the requests
3. Multithreading capability
4. Application Related Issues
5. Technology Infrastructure Capacity (See recommended requirement for NIP below)

**Recommended Technology Infrastructure (including Server Specification) requirements for NIP**

**Hardware**

* G8/G9 Server with at least 16 CPU Processors (2.3GHz)
* 1TB HDD
* 40GB RAM

**Operating System**

* 64-Bit Operating System
* Policy on regular purging and fine-tuning of database.
* Registry Setting for System running Windows
* Time Wait-Delay should be set at 10 seconds
* MaxPort set at 65535