**Business Requirement Description / Business Solution Description**

**FNB Transactions Controls**

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| --- | --- |
| **Client** | FNB |
| **Reference** | **FNB\_SMB\_BSD\_TransactionControl** |
| **Version** | 1 .1 |
| **Status** | Draft |

Document Versions

| Version | Status | Author(s) | Date | Modifications |
| --- | --- | --- | --- | --- |
| 1.0 | Draft | Hssaini Bahaeddine | 13/02/2018 |  |
| 1.2 | Draft | Ahmed EL ORCHE | 30/11/2018 |  |

Reference Documents

| Code | Document name | Version | Origin |
| --- | --- | --- | --- |
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|  |  |  |  |

Terminology & Abbreviations

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| --- | --- |
| **Term** | **Definition** |
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Distribution List

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# Introduction

This document describes the solution provided by HPS to manage the SmartBox financial transactions sent to PowerCARD.

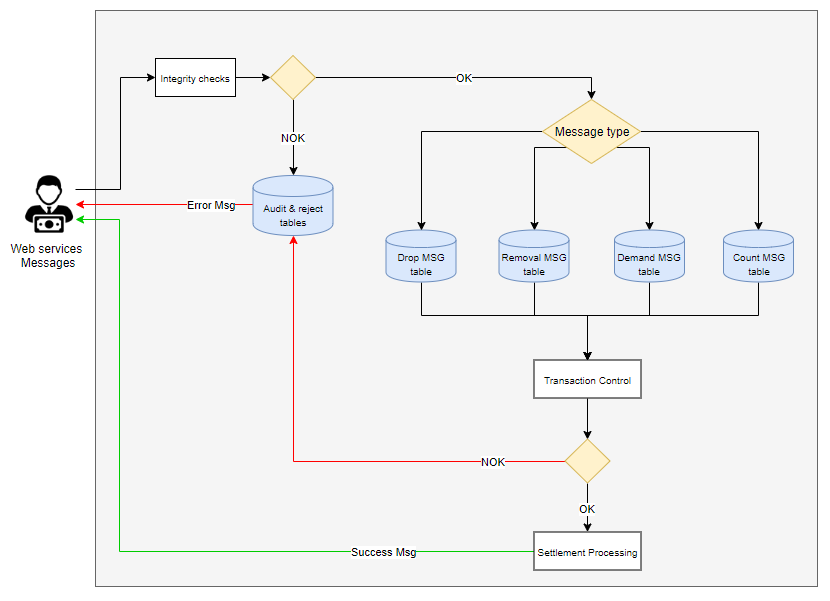
The requirement document reference for the elaboration of this BSD is “MARS MQ IBM MQ Message Layout, System Requirements Specifications” & “POP\_Cash MARS-PowerCard\_Customer Settlement FRS\_v3.0\_2017.10.03”.

# Context

This document will describe and explain how the received messages will be consumed and processed and gives a view of PowerCard responses. All the checks done within PowerCARD will be exposed at this document.

# SmartBox Financial messages

In the below diagram we describe how PowerCARD will process when Drop, Removal, Verificationand Demand message received.



**Figure 1:** Diagram of receiving SmartBox messages

When Powercard receive the financial message, the below checks will be done:

* Check status code of the financial message :
  + Message code Successful (000) 🡪 continue process
  + Message code Unsuccessful (any other status code different than ‘000’) 🡪 log the financial transaction to **OTHER\_MESSAGE\_TABLE.**
* Check Message Type:
  + Message Type is one of the following types: Drop, Removal, Verification and Demand 🡪 log the financial transaction to the corresponding table **SMB\_DROP\_MESSAGE, SMB\_REMOVAL\_MESSAGE, SMB\_VERIFICATION\_MESSAGE and SMB\_DEMAND\_MESSAGE.**
  + Message Type is one of the following types: Acknowledgment, status and query message 🡪 log the financial transaction to **OTHER\_MESSAGE\_TABLE.**

In the case the log of financial transaction is done PowerCARD will return successful status of Web services response, otherwise a failed response will be return.

* 1. **Drop message**

**3.1.1 Description**

The drop message is a financial transaction sent to PowerCARD when cash is deposited into the SmartBox device.

The structure of the transaction is described below:

Example: **D**,100000000096052,BA0884,72087000000176,N,2,147568593,DEPOSITREFERENCE,YYYY-MM-DD HH:MM:SS:TTTTT,601123,ZAR,2500,57,24,i10c=0,i20c=2,i50c=5,iR1=2,iR2=5,iR5=8,iR10=200,iR20=1,iR50=55,iR100=60,iR200=82,0,0,0,0,000

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Drop Message Layout for SmartBox** | | | |
|  | **Field** | **Datatype** | **Size** | **Description** |
| 1 | Indicator | CHAR | 1 | To indicate if the message is a drop e.g. “D”.  D – Drop |
| 2 | Merchant Number | INT | 15 | To represent the merchant number for the merchant who is depositing into the device. |
| 3 | Device Number | CHAR | 15 | The merchant device number is represented by the 6 digits of the string. |
| 4 | Bag Number | CHAR | 14 | The bag number is represented by 14 alphanumeric of the string. |
| 5 | Container Type | CHAR | 1 | To indicate that the bag contains Notes = “N”.  N=Notes  C=Coins  **Note:** SmartBox accepts only notes deposits. |
| 6 | Sequence Number | INT | 4 | Every drop message for every bag should have a sequence number.  **Note:** when the bag is replaced with an empty bag then the sequence number should start from 1. |
| 7 | Transaction ID | INT | 10 | A unique identifier for each transaction performed on the SB device, e.g. 147568593  **Note:** The transaction ID is important for every transaction processed, whether it is a drop or removal. This transaction ID is tied back to the status message based on merchant settlement option. The vendor should always use a unique transaction ID and FNB Cash will use this ID to trace the transaction. |
| 8 | Deposit Reference | CHAR | 20 | Should display the merchant reference. |
| 9 | Transmission Date | DATETIME | 26 | To represent the date and time when the device transmitted the drop e.g. YYYY-MM-DD HH:MM:SS:TTTTT “2014-03-11 21:52:00.00000” |
| 10 | Canister Number | INT | 6 | Optional: The canister number is indicated by the 6 digits e.g. 601123 |
| 11 | Currency | CHAR | 3 | Currency used  ZAR: South African Rand |
| 12 | Total Amount | DECIMAL | 10 | Should represent the sum of the drop should include the sum of coins and notes , e.g. 2100.00 |
| 13 | Total Notes | INT | 10 | Should represent the total number of notes in the bag e.g. 20 |
| 14 | Total Coins | INT | 10 | Should represent the total number of coins in the bag e.g. 20 |
| 15 | Denomination1 | INT | 5 | The number of 10c coins for the drop  **Note:** Set to “0” by default if there is no coin. |
| 16 | Denomination2 | INT | 5 | The number of 20c coins for the drop  **Note:** Set to “0” by default if there is no coin. |
| 17 | Denomination3 | INT | 5 | The number of 50c coins for the drop  **Note:** Set to “0” by default if there is no coin. |
| 18 | Denomination4 | INT | 5 | The number of R1 coins for the drop  **Note:** Set to “0” by default if there is no coin. |
| 19 | Denomination5 | INT | 5 | The number of R2 coins for the drop  **Note:** Set to “0” by default if there is no coin. |
| 20 | Denomination6 | INT | 5 | The number of R5 coins for the drop  **Note:** Set to “0” by default if there is no coin. |
| 21 | Denomination7 | INT | 5 | The number of R10 notes for the drop  **Note:** Set to “0” by default if there is no note. |
| 22 | Denomination8 | INT | 5 | The number of R20 notes for the drop  **Note:** Set to “0” by default if there is no note. |
| 23 | Denomination9 | INT | 5 | The number of R50 notes for the drop  **Note:** Set to “0” by default if there is no note. |
| 24 | Denomination10 | INT | 5 | The number of R100 notes for the drop  **Note:** Set to “0” by default if there is no note. |
| 25 | Denomination11 | INT | 5 | The number of R200 notes for the drop  **Note:** Set to “0” by default if there is no note. |
| 26 | Denomination12 | INT | 5 | **Note:** Set to “0” by default. |
| 27 | Denomination13 | INT | 5 | **Note:** Set to “0” by default. |
| 28 | Denomination14 | INT | 5 | **Note:** Set to “0” by default. |
| 29 | Denomination15 | INT | 5 | **Note:** Set to “0” by default. |
| 30 | Status | CHAR | 3 | **Successfully:000**  **any other status code is a failure** |
| *Denomination 1 to 6: Values should be set to “0” by default if there is no coin deposit.*  *Denomination 7 to 11: Values should be set to “0” by default if there is no notes deposit.*  *Denominations 12 to 15: Values should be set to “0” by default.* | | | | |

In case the drop message is sent to PowerCARD with the success status code, PowerCARD will store this financial transaction in the SMB\_DROP\_MESSAGE described hereafter:

| **Field name** | **Type** | **Length** |
| --- | --- | --- |
| Transaction ID | VARCHAR | 10 |
| Merchant Number | VARCHAR | 15 |
| Device Number | VARCHAR | 15 |
| Bag Number | VARCHAR | 14 |
| Container Type | VARCHAR | 1 |
| Sequence Number | VARCHAR | 4 |
| Deposit Reference | VARCHAR | 20 |
| Transmission Date | DATE | 26 |
| Canister Number | VARCHAR | 6 |
| Currency | VARCHAR | 3 |
| Total Amount | NUMBER | 10 |
| Total Notes | NUMBER | 10 |
| Total Coins | NUMBER | 10 |
| Denomination1 | NUMBER | 5 |
| Denomination2 | NUMBER | 5 |
| Denomination3 | NUMBER | 5 |
| Denomination4 | NUMBER | 5 |
| Denomination5 | NUMBER | 5 |
| Denomination6 | NUMBER | 5 |
| Denomination7 | NUMBER | 5 |
| Denomination8 | NUMBER | 5 |
| Denomination9 | NUMBER | 5 |
| Denomination10 | NUMBER | 5 |
| Denomination11 | NUMBER | 5 |
| Denomination12 | NUMBER | 5 |
| Denomination13 | NUMBER | 5 |
| Denomination14 | NUMBER | 5 |
| Denomination15 | NUMBER | 5 |
| Settlement flag | CHAR | 1 |
| Date create | DATE | 14 |
| Date update | DATE | 14 |

**3.1.2 Exception Handling**

Here after the list of validations required:

| **Exception** | **Description** | **Details** |
| --- | --- | --- |
| Exept-01 | Merchant number missing | If a Merchant number does not exist on PowerCARD.  PowerCARD should raise an exception. |
| Exept-02 | Device Number  Missing | If a device number does not exist on PowerCARD.  PowerCARD should raise an exception. |
| Exept-03 | Transaction ID | If Transaction ID is duplicated PowerCARD should raise an exception. |
| Exept-04 | Container Type | If drop message contain Notes & coins  PowerCARD should raise an exception |
| Exept-05 | Link device to merchant | If Device is not linked to merchant, PowerCARD should raise an exception. |
| Exept-06 | Sequence number missing | If sequence number does not exist on, PowerCARD should raise an exception. |
| Exept-07 | Sequence number duplicated | If sequence number is duplicated, PowerCARD should raise an exception. |

* 1. **Removal message**

**3.2.1 Description**

The removal message is a financial transaction sent to PowerCARD when the SmartBox bag containing cash is removed from the SmartBox device.

The structure of the transaction is described below:

Example:

**R**,BA0884,72087000000176,N,50,04583,BAGNUMBERREFERENCE,YYYY-MM-DD HH:MM:SS:TTTTT,906112,ZAR,2500,57,0,i10c=0,i20c=0,i50c=0,iR1=0,iR2=0,iR5=0,iR10=200,iR20=1,iR50=55,iR100=60,iR200=80,0,0,0,0,000

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | **Field** | **Datatype** | **Size** | **Description** |
| 1 | Indicator | CHAR | 1 | To indicate if the message is a removal e.g. “R” for a drop.  R – Removal |
| 2 | Device Number | CHAR | 15 | The merchant device number is represented by the 6 digits of the string. |
| 3 | Bag Number | CHAR | 14 | The bag number is represented by 14 alphanumeric of the string. |
| 4 | Container Type | CHAR | 1 | To indicate that the bag contains Notes = “N”.  N=Notes  C=Coin  **Note:** SmartBox accepts only notes deposits. |
| 5 | Sequence Number | INT | 4 | Should indicate the last drop sequence number sent. e.g. 50 if 50 was the last sequence number sent. |
| 6 | Transaction ID | INT | 10 | A unique identifier for each transaction performed on the SB device, e.g. 147568593  **Note:** The transaction ID is important for every transaction processed, whether it is a drop or removal. This transaction ID is tied back to the status message based on merchant settlement option. The vendor should always use a unique transaction ID and FNB Cash will use this ID to trace the transaction. |
| 7 | Deposit Reference | CHAR | 20 | Should display the merchant reference.  **Note:** Can apply for all SmartBox devices that allow the merchant to put a reference number on the physical device, this should overwrite the defaulted reference defined on the merchant’s profile on PowerCard. This field should be an empty value for SmartBox devices that does not allow merchant to put a reference number on physical device and this will default to the reference defined on merchant profile on PowerCard. |
| 8 | Transmission Date and Time | DATETIME | 26 | To represent the date and time when the removal was transmitted YYYY-MM-DD HH:MM:SS:TTTTT e.g. “2014-03-11 21:52:00.000000” |
| 9 | Canister Number | INT | 6 | Optional: The canister number is indicated by the 6 digits e.g. 601123  **Note:** This field is optional, can be set to “0” by default if there isn’t a canister used. |
| 10 | Currency | CHAR | 3 | Currency used  **In-scope**  ZAR: South African Rand  **Out-of-scope**  BWP – Botswana Pula  LSL – Lesotho Loti  NAD – Namibian Dollar |
| 11 | Total Amount | DECIMAL | 10 | Should represent the sum of the drop should include the sum of coins and notes , e.g. 2100.00 |
| 12 | Total Notes | INT | 10 | Should represent the total number of notes in the bag e.g. 20 |
| 13 | Total Coins | INT | 10 | Should represent the total number of coins in the bag e.g. 20 |
| 14 | Denomination1 | INT | 5 | The number of 10c coins for the removal  **Note:** Set to “0” by default if there is no coin. |
| 15 | Denomination2 | INT | 5 | The number of 20c coins for the removal  **Note:** Set to “0” by default if there is no coin. |
| 16 | Denomination3 | INT | 5 | The number of 50c coins for the removal  **Note:** Set to “0” by default if there is no coin. |
| 17 | Denomination4 | INT | 5 | The number of R1 coins for the removal  **Note:** Set to “0” by default if there is no coin. |
| 18 | Denomination5 | INT | 5 | The number of R2 coins for the removal  **Note:** Set to “0” by default if there is no coin. |
| 19 | Denomination6 | INT | 5 | The number of R5 coins for the removal  **Note:** Set to “0” by default if there is no coin. |
| 20 | Denomination7 | INT | 5 | The number of R10 notes for the removal  **Note:** Set to “0” by default if there is no note. |
| 21 | Denomination8 | INT | 5 | The number of R20 notes for the removal  **Note:** Set to “0” by default if there is no note. |
| 22 | Denomination9 | INT | 5 | The number of R50 notes for the removal  **Note:** Set to “0” by default if there is no note. |
| 23 | Denomination10 | INT | 5 | The number of R100 notes for the removal  **Note:** Set to “0” by default if there is no note. |
| 24 | Denomination11 | INT | 5 | The number of R200 notes for the removal  **Note:** Set to “0” by default if there is no note. |
| 25 | Denomination12 | INT | 5 | **Note:** Set to “0” by default. |
| 26 | Denomination13 | INT | 5 | **Note:** Set to “0” by default. |
| 27 | Denomination14 | INT | 5 | **Note:** Set to “0” by default. |
| 28 | Denomination15 | INT | 5 | **Note:** Set to “0” by default. |
| 29 | Status | CHAR | 3 | **Successfully:000**  **any other status code is a failure** |
| *Denomination 1 to 6: Values should be set to “0” by default if there is no coin deposit.*  *Denomination 7 to 11: Values should be set to “0” by default if there is no notes deposit.*  *Denominations 12 to 15: Values should be set to “0” by default.* | | | | |

In case the removal message is sent to PowerCARD with the success status code, PowerCARD will store this financial transaction in the SMB\_REMOVAL\_MESSAGE described hereafter:

| **Field name** | **Type** | **Length** |
| --- | --- | --- |
| Transaction ID | VARCHAR | 10 |
| Device Number | VARCHAR | 15 |
| Bag Number | VARCHAR | 14 |
| Container Type | VARCHAR | 1 |
| Sequence Number | VARCHAR | 4 |
| Deposit Reference | VARCHAR | 20 |
| Transmission Date | DATE | 26 |
| Canister Number | VARCHAR | 6 |
| Currency | VARCHAR | 3 |
| Total Amount | NUMBER | 10 |
| Total Notes | NUMBER | 10 |
| Total Coins | NUMBER | 10 |
| Denomination1 | NUMBER | 5 |
| Denomination2 | NUMBER | 5 |
| Denomination3 | NUMBER | 5 |
| Denomination4 | NUMBER | 5 |
| Denomination5 | NUMBER | 5 |
| Denomination6 | NUMBER | 5 |
| Denomination7 | NUMBER | 5 |
| Denomination8 | NUMBER | 5 |
| Denomination9 | NUMBER | 5 |
| Denomination10 | NUMBER | 5 |
| Denomination11 | NUMBER | 5 |
| Denomination12 | NUMBER | 5 |
| Denomination13 | NUMBER | 5 |
| Denomination14 | NUMBER | 5 |
| Denomination15 | NUMBER | 5 |
| Settlement flag | CHAR | 1 |
| Date create | DATE | 14 |
| Date update | DATE | 14 |

**3.1.2 Exception Handling**

Here after the list of validations required:

| **Exception** | **Description** | **Details** |
| --- | --- | --- |
| Exept-01 | Device Number  Missing | If a device number does not exist on PowerCARD.  PowerCARD should raise an exception. |
| Exept-02 | Transaction ID | If Transaction ID is duplicated PowerCARD should raise an exception. |
| Exept-03 | Container | If removal message contains Notes & coins  PowerCARD should raise an exception |
| Exept-04 | Missing sequence | If sequence number does not exist on, PowerCARD should raise an exception. |
| Exept-05 | Duplicate sequence | If sequence number is duplicated, PowerCARD should raise an exception. |
| Exept-06 | Sum of Drops equal | If values between Removal and sum of Drops are not equal. |

In the case the total amount received in the removal message for a particular container is not equal to the aggregated drop messages PowerCARD will generate a case.

The case generation will follow the POWERCARD standard in HPS. For SmartBox, we will only process generic cases.

* 1. **Status message**

An acknowledgement message is transmitted for the received drop or removal signal.

The structure of the transaction is described below:

Example: **S**,147568593(D,9600,BA0884,72087000000176,N,2,147568593,DEPOSITREFERENCE,YYYY-MM-DD HH:MM:SS:TTTTT,601123,ZAR,2500,57,24,i10c=0,i20c=2,i50c=5,iR1=2,iR2=5,iR5=8,iR10=200,iR20=1,iR50=55,iR100=60,iR200=82,0,0,0,0)RESULT:ACK

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | **Field** |  | **Type** | **Description** |
| 1 | Indicator | CHAR | 2 | To indicate that the drop or removal message has been received.  S – Status |
| 2 | Transaction ID | INT | 10 | A unique identifier for each transaction performed on the SB device, e.g. 147568593  **Note:** The transaction ID is important for every transaction processed, whether it is a drop or removal. This transaction ID is tied back to the status message based on merchant settlement option. CASH CONNECT should always use a unique transaction ID and FNB Cash will use this ID to trace the transaction. |
| 3 | Received message | CHAR | 150 | D,100000000009600,BA0884,72087000000176,N,2,147568593,DEPOSITREFERENCE,YYYY-MM-DD HH:MM:SS:TTTTT,601123,ZAR,2500,57,24,i10c=0,i20c=2,i50c=5,iR1=2,iR2=5,iR5=8,iR10=200,iR20=1,iR50=55,iR100=60,iR200=82,0,0,0,0 |
| 4 | Result | CHAR | 4 | The message status ID which should indicate what type of message it is.  **Error feedback messages:**  **DUP** – Duplicate message indicates the message is a duplicate where the merchant, bag number, Transaction ID, date time and indicator matches an existing message received.  **MAP** – Device is not mapped message indicates that the device is not mapped to the merchant. Merchant will not receive credit.  **INV** – This indicator will be sent if either the indicator, bag numbers, timestamp, etc. is incorrect or does not meet the message layout requirement.  **MNF** – Merchant not found, the merchant not found or merchant does not exist.  **FCR** – Failed to credit  **Successful feedback messages:**  **STP** – Successfully processed  **SCR** – Successfully credited  **Note:** All error messages will be logged as exceptions. There will be a separate message sent for every error type detected. |

The received message will be logged in SMB\_OTHER MESSAGES described hereafter:

| **Field name** | **Type** | **Length** |
| --- | --- | --- |
| Message Type | VARCHAR2 | 2 |
| Bag Number | VARCHAR | 14 |
| Device Number | VARCHAR | 15 |
| Transaction ID | VARCHAR | 10 |
| Received message | VARCHAR | 150 |
| Result | VARCHAR | 4 |
| Container Type | VARCHAR | 1 |
| Transmission Date | DATE | 26 |
| Canister Number | VARCHAR | 6 |
| Currency | VARCHAR | 3 |
| Cash Centre Type | VARCHAR | 4 |
| Cash Centre Code | VARCHAR | 4 |
| Total Amount | NUMBER | 10 |
| Total Notes | NUMBER | 10 |
| Total Coins | NUMBER | 10 |
| Denomination1 | NUMBER | 5 |
| Denomination2 | NUMBER | 5 |
| Denomination3 | NUMBER | 5 |
| Denomination4 | NUMBER | 5 |
| Denomination5 | NUMBER | 5 |
| Denomination6 | NUMBER | 5 |
| Denomination7 | NUMBER | 5 |
| Denomination8 | NUMBER | 5 |
| Denomination9 | NUMBER | 5 |
| Denomination10 | NUMBER | 5 |
| Denomination11 | NUMBER | 5 |
| Denomination12 | NUMBER | 5 |
| Denomination13 | NUMBER | 5 |
| Denomination14 | NUMBER | 5 |
| Denomination15 | NUMBER | 5 |
| Amount Credited | DECIMAL | 10 |
| Account Credited | INTEGER | 11 |
| Deposit Reference | CHAR | 30 |
| DDA/GL Trancode | INTEGER | 4 |
| Amount Debited | DECIMAL | 10 |
| Account Debited | INTEGER | 11 |
| Deposit Reference | CHAR | 30 |
| GL Trancode | INTEGER | 4 |
| VODS trace ID | CHAR | 12 |
| VODS Status Code | ALPHA | 8 |
| Date create | DATE | 14 |
| Date update | DATE | 14 |

* 1. **Verification message**

**3.4.1 Description**

The verification message is a financial transaction sent to PowerCARD. It contains the information of the counted amount from the cash centre or OCPCs. This message indicates that the bag has been opened, counted and reconciled accordingly.

The structure of the transaction is described below:

Example:

**V**,BA0884,72087000000176,N,05958586,YYYY-MM-DD HH:MM:SS:TTTTT,906112,ZAR,OCPC,403,2500,57,0,i10c=0,i20c=0,i50c=0,iR1=0,iR2=0,iR5=0,iR10=200,iR20=1,iR50=55,iR100=60,iR200=80,0,0,0,0,000

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Field** |  | **Type** | **Description** |
| 1 | Indicator | CHAR | 1 | To indicate if the message is a verification that the bag has been reconciled.  V– Verification |
| 2 | Device Number | CHAR | 15 | The merchant device number is represented by the 6 digits of the string |
| 3 | Bag Number | INT | 14 | The bag number is represented by 14 digits of the string. |
| 4 | Container Type | CHAR | 1 | To indicate that the bag contains Notes = “N”.  N=Notes  C=Coin  **Note:** SmartBox accepts only notes deposits. |
| 5 | Transaction ID | INT | 10 | A unique identifier for each transaction performed on the SB device, e.g. 147568593  **Note:** The transaction ID is important for every transaction processed, whether it is a drop or removal. This transaction ID is tied back to the status message based on merchant settlement option. The vendor should always use a unique transaction ID and FNB Cash will use this ID to trace the transaction. |
| 6 | Transmission Date | DATETIME | 26 | To represent the date and time when the drop was done YYYY-MM-DD HH:MM:SS:TTTTT  e.g. “2014-03-11 21:52:00.000000” |
| 7 | Canister Number | INT | 6 | Optional: The canister number is indicated by the 6 digits e.g. 601123  **Note:** This field is optional, can be set to “0” by default if there isn’t a canister used |
| 8 | Currency | CHAR | 3 | Currency used  **In-scope**  ZAR: South African Rand  **Out-of-scope**  BWP – Botswana Pula  LSL – Lesotho Loti  NAD – Namibian Dollar |
| 9 | Cash Centre Type | CHAR | 4 | OCPC – Outsourced Cash Processing Centre  FNBC – FNB Cash Centre |
| 10 | Cash Centre Code | CHAR | 4 | Should be the cash centre code of where the bag should be counted and is linked to field 9 above.  E.g. SBY – 403 |
| 11 | Total Amount | DECIMAL | 10 | Should represent the sum of the container should include the sum of coins and notes e.g. 2100 |
| 12 | Total Notes | INT | 10 | Should represent the total number of notes in the bag e.g. 20 |
| 13 | Total Coins | INT | 10 | Should represent the total number of coins in the bag e.g. 20 |
| 14 | Denomination1 | INT | 5 | The number of 10c for the drop  **Note:** Set to “0” by default if there is no coin. |
| 15 | Denomination2 | INT | 5 | The number of 20c for the drop  **Note:** Set to “0” by default if there is no coin. |
| 16 | Denomination3 | INT | 5 | The number of 50c for the drop  **Note:** Set to “0” by default if there is no coin. |
| 17 | Denomination4 | INT | 5 | The number of R1 for the drop  **Note:** Set to “0” by default if there is no coin. |
| 18 | Denomination5 | INT | 5 | The number of R2 for the drop  **Note:** Set to “0” by default if there is no coin. |
| 19 | Denomination6 | INT | 5 | The number of R5 for the drop  **Note:** Set to “0” by default if there is no coin. |
| 20 | Denomination7 | INT | 5 | The number of R10 notes for the drop  **Note:** Set to “0” by default if there is no note. |
| 21 | Denomination8 | INT | 5 | The number of R20 notes for the drop  **Note:** Set to “0” by default if there is no note. |
| 22 | Denomination9 | INT | 5 | The number of R50 notes for the drop  **Note:** Set to “0” by default if there is no note. |
| 23 | Denomination10 | INT | 5 | The number of R100 notes for the drop  **Note:** Set to “0” by default if there is no note. |
| 24 | Denomination11 | INT | 5 | The number of R200 notes for the drop  **Note:** Set to “0” by default if there is no note. |
| 25 | Denomination12 | INT | 5 | **Note:** Set to “0” by default. |
| 26 | Denomination13 | INT | 5 | **Note:** Set to “0” by default. |
| 27 | Denomination14 | INT | 5 | **Note:** Set to “0” by default. |
| 28 | Denomination15 | INT | 5 | **Note:** Set to “0” by default. |
| 29 | Denomination15 | INT | 5 | **Note:** Set to “0” by default. |
| 30 | Status | CHAR | 3 | **Successfully:000**  **any other status code is a failure** |

The received message will be logged in SMB\_VERIFICATION\_MESSAGE described hereafter:

| **Field name** | **Type** | **Length** |
| --- | --- | --- |
| Transaction ID | VARCHAR | 10 |
| Device Number | VARCHAR | 15 |
| Bag Number | VARCHAR | 14 |
| Container Type | VARCHAR | 1 |
| Transmission Date | DATE | 26 |
| Canister Number | VARCHAR | 6 |
| Currency | VARCHAR | 3 |
| Cash Centre Type | VARCHAR | 4 |
| Cash Centre Code | VARCHAR | 4 |
| Total Amount | NUMBER | 10 |
| Total Notes | NUMBER | 10 |
| Total Coins | NUMBER | 10 |
| Denomination1 | NUMBER | 5 |
| Denomination2 | NUMBER | 5 |
| Denomination3 | NUMBER | 5 |
| Denomination4 | NUMBER | 5 |
| Denomination5 | NUMBER | 5 |
| Denomination6 | NUMBER | 5 |
| Denomination7 | NUMBER | 5 |
| Denomination8 | NUMBER | 5 |
| Denomination9 | NUMBER | 5 |
| Denomination10 | NUMBER | 5 |
| Denomination11 | NUMBER | 5 |
| Denomination12 | NUMBER | 5 |
| Denomination13 | NUMBER | 5 |
| Denomination14 | NUMBER | 5 |
| Denomination15 | NUMBER | 5 |
| Settlement flag | CHAR | 1 |
| Date create | DATE | 14 |
| Date update | DATE | 14 |

**3.4.2 Exception handling**

Here after the list of validations required:

| **Exception** | **Description** | **Details** |
| --- | --- | --- |
| Exept-01 | Device Number  missing | If a device number does not exist on PowerCARD.  PowerCARD should raise an exception. |
| Exept-02 | Transaction ID | If Transaction ID is duplicated PowerCARD should raise an exception. |
| Exept-03 | Container | If removal message contain Notes & coins  PowerCARD should raise an exception |

In the case the total amount received in the verification message for a particular container is not equal to the aggregated drop messages PowerCARD will generate a case.

The case generation will follow the POWERCARD standard in HPS. For SmartBox, we will only process generic cases.

PowerCARD will generate a financial transaction to adjust the surplus or shortage as per as defined in the parameterization described in the Onboarding BSD and will be sent to FNB integration layer.

* 1. **Query message**

The query message is a transaction sent from OCPC to FNB cash systems for details of a bag.

This message contains the indicator and bag number.

The structure of the transaction is described below:

Example:

**Q**,12345678910112

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Field** | **Datatype** | **Length** | | **Description** |
| 1 | Indicator | CHAR | 1 | Q – Query Bag | |
| 2 | Bag Number | CHAR | 14 | The bag number is represented by 14 digits of the string. | |

The received message will be logged in SMB\_OTHER MESSAGES described hereafter:

| **Field name** | **Type** | **Length** |
| --- | --- | --- |
| Message Type | VARCHAR2 | 2 |
| Bag Number | VARCHAR | 14 |
| Device Number | VARCHAR | 15 |
| Transaction ID | VARCHAR | 10 |
| Received message | VARCHAR | 150 |
| Result | VARCHAR | 4 |
| Container Type | VARCHAR | 1 |
| Transmission Date | DATE | 26 |
| Canister Number | VARCHAR | 6 |
| Currency | VARCHAR | 3 |
| Cash Centre Type | VARCHAR | 4 |
| Cash Centre Code | VARCHAR | 4 |
| Total Amount | NUMBER | 10 |
| Total Notes | NUMBER | 10 |
| Total Coins | NUMBER | 10 |
| Denomination1 | NUMBER | 5 |
| Denomination2 | NUMBER | 5 |
| Denomination3 | NUMBER | 5 |
| Denomination4 | NUMBER | 5 |
| Denomination5 | NUMBER | 5 |
| Denomination6 | NUMBER | 5 |
| Denomination7 | NUMBER | 5 |
| Denomination8 | NUMBER | 5 |
| Denomination9 | NUMBER | 5 |
| Denomination10 | NUMBER | 5 |
| Denomination11 | NUMBER | 5 |
| Denomination12 | NUMBER | 5 |
| Denomination13 | NUMBER | 5 |
| Denomination14 | NUMBER | 5 |
| Denomination15 | NUMBER | 5 |
| Amount Credited | DECIMAL | 10 |
| Account Credited | INTEGER | 11 |
| Deposit Reference | CHAR | 30 |
| DDA/GL Trancode | INTEGER | 4 |
| Amount Debited | DECIMAL | 10 |
| Account Debited | INTEGER | 11 |
| Deposit Reference | CHAR | 30 |
| GL Trancode | INTEGER | 4 |
| VODS trace ID | CHAR | 12 |
| VODS Status Code | ALPHA | 8 |
| Date create | DATE | 14 |
| Date update | DATE | 14 |

* 1. **Pre-advisement message**

The pre advisement message contains the bag removal information and is used by OCPCs.

The structure of the transaction is described below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Field** | **Datatype** | **Length** | | **Description** |
| 1 | Indicator | CHAR | 1 | P – Query Bag | |
| 2 | Device Number | CHAR | 15 | The merchant device number is represented by the 6 digits of the string | |
| 3 | Bag Number | INT | 14 | The bag number is represented by 14 digits of the string. | |
| 4 | Container Type | CHAR | 1 | To indicate that the bag contains Notes = “N”.  N=Notes  C=Coin  M=Notes and Coin  **Note:** SmartBox accepts only notes deposits. | |
| 5 | Transaction ID | INT | 10 | A unique identifier for each transaction performed on the SB device, e.g. 147568593  **Note:** The transaction ID is important for every transaction processed, whether it is a drop or removal. This transaction ID is tied back to the status message based on merchant settlement option. The vendor should always use a unique transaction ID and FNB Cash will use this ID to trace the transaction. | |
| 6 | Transmission Date | DATETIME | 26 | To represent the date and time when the drop was done YYYY-MM-DD HH:MM:SS:TTTTT  e.g. “2014-03-11 21:52:00.000000” | |
| 7 | Canister Number | INT | 6 | Optional: The canister number is indicated by the 6 digits e.g. 601123  **Note:** This field is optional, can be set to “0” by default if there isn’t a canister used | |
| 8 | Currency | CHAR | 3 | Currency used  **In-scope**  ZAR: South African Rand  **Out-of-scope**  BWP – Botswana Pula  LSL – Lesotho Loti  NAD – Namibian Dollar | |
| 9 | Cash Centre Type | CHAR | 4 | OCPC – Outsourced Cash Processing Centre  FNBC – FNB Cash Centre | |
| 10 | Cash Centre Code | CHAR | 4 | Should be the cash centre code of where the bag should be counted.  E.g. SBY – 403 | |
| 11 | Total Amount | DECIMAL | 10 | Should represent the sum of the drop should include the sum of coins and notes e.g. 2100 | |
| 12 | Total Notes | INT | 10 | Should represent the total number of notes in the bag e.g. 20 | |
| 13 | Total Coins | INT | 10 | Should represent the total number of coins in the bag e.g. 20 | |
| 14 | Denomination1 | INT | 5 | The number of 10c for the drop  **Note:** Set to “0” by default if there is no coin. | |
| 15 | Denomination2 | INT | 5 | The number of 20c for the drop  **Note:** Set to “0” by default if there is no coin. | |
| 16 | Denomination3 | INT | 5 | The number of 50c for the drop  **Note:** Set to “0” by default if there is no coin. | |
| 17 | Denomination4 | INT | 5 | The number of R1 for the drop  **Note:** Set to “0” by default if there is no coin. | |
| 18 | Denomination5 | INT | 5 | The number of R2 for the drop  **Note:** Set to “0” by default if there is no coin. | |
| 19 | Denomination6 | INT | 5 | The number of R5 for the drop  **Note:** Set to “0” by default if there is no coin. | |
| 20 | Denomination7 | INT | 5 | The number of R10 notes for the drop  **Note:** Set to “0” by default if there is no note. | |
| 21 | Denomination8 | INT | 5 | The number of R20 notes for the drop  **Note:** Set to “0” by default if there is no note. | |
| 22 | Denomination9 | INT | 5 | The number of R50 notes for the drop  **Note:** Set to “0” by default if there is no note. | |
| 23 | Denomination10 | INT | 5 | The number of R100 notes for the drop  **Note:** Set to “0” by default if there is no note. | |
| 24 | Denomination11 | INT | 5 | The number of R200 notes for the drop  **Note:** Set to “0” by default if there is no note. | |
| 25 | Denomination12 | INT | 5 | **Note:** Set to “0” by default. | |
| 26 | Denomination13 | INT | 5 | **Note:** Set to “0” by default. | |
| 27 | Denomination14 | INT | 5 | **Note:** Set to “0” by default. | |
| 28 | Denomination15 | INT | 5 | **Note:** Set to “0” by default. | |
| 29 | Denomination15 | INT | 5 | **Note:** Set to “0” by default. | |

The received message will be logged in SMB\_OTHER MESSAGES described hereafter:

| **Field name** | **Type** | **Length** |
| --- | --- | --- |
| Message Type | VARCHAR2 | 2 |
| Bag Number | VARCHAR | 14 |
| Device Number | VARCHAR | 15 |
| Transaction ID | VARCHAR | 10 |
| Received message | VARCHAR | 150 |
| Result | VARCHAR | 4 |
| Container Type | VARCHAR | 1 |
| Transmission Date | DATE | 26 |
| Canister Number | VARCHAR | 6 |
| Currency | VARCHAR | 3 |
| Cash Centre Type | VARCHAR | 4 |
| Cash Centre Code | VARCHAR | 4 |
| Total Amount | NUMBER | 10 |
| Total Notes | NUMBER | 10 |
| Total Coins | NUMBER | 10 |
| Denomination1 | NUMBER | 5 |
| Denomination2 | NUMBER | 5 |
| Denomination3 | NUMBER | 5 |
| Denomination4 | NUMBER | 5 |
| Denomination5 | NUMBER | 5 |
| Denomination6 | NUMBER | 5 |
| Denomination7 | NUMBER | 5 |
| Denomination8 | NUMBER | 5 |
| Denomination9 | NUMBER | 5 |
| Denomination10 | NUMBER | 5 |
| Denomination11 | NUMBER | 5 |
| Denomination12 | NUMBER | 5 |
| Denomination13 | NUMBER | 5 |
| Denomination14 | NUMBER | 5 |
| Denomination15 | NUMBER | 5 |
| Amount Credited | DECIMAL | 10 |
| Account Credited | INTEGER | 11 |
| Deposit Reference | CHAR | 30 |
| DDA/GL Trancode | INTEGER | 4 |
| Amount Debited | DECIMAL | 10 |
| Account Debited | INTEGER | 11 |
| Deposit Reference | CHAR | 30 |
| GL Trancode | INTEGER | 4 |
| VODS trace ID | CHAR | 12 |
| VODS Status Code | ALPHA | 8 |
| Date create | DATE | 14 |
| Date update | DATE | 14 |

* 1. **Financial message**

PowerCARD will receive financial message that structure is described below:

Example:

SPAR Boksburg,100000000001222,BA0884159642284,72087000000176,05958586,YYYY-MM-DD HH:MM:SS:TTTTT,906112,ZAR,2500,51260075181, SBX72087000000176,5042,2500,51260075181,SBX72087000000176, 9998,VODSNYHSQ1CC,00000000

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Field** |  | **Type** | **Description** |
| 1 | Merchant Short Name | CHAR | 30 | Merchant name can be up to 30 characters long. Should make use of the merchant Short Name. |
| 2 | Merchant Number | INT | 15 | To represent the merchant number for the merchant who is depositing into the device |
| 3 | Device Number | CHAR | 15 | The merchant device number is represented by the 6 digits of the string |
| 4 | Bag Number | CHAR | 14 | The bag number is represented by 14 digits of the string. |
| 5 | Transaction ID | INT | 10 | A unique identifier for each transaction performed on the SB device, e.g. 147568593  **Note:** The transaction ID is important for every transaction processed, whether it is a drop or removal. This transaction ID is tied back to the status message based on merchant settlement option. The vendor should always use a unique transaction ID and FNB Cash will use this ID to trace the transaction. |
| 6 | Processed Date Time | DATETIME | 26 | To represent the date and time when the drop was done YYYY-MM-DD HH:MM:SS:TTTTT  e.g. “2014-03-11 21:52:00.000000” |
| 7 | Canister Number | INT | 6 | Optional: The canister number is indicated by the 6 digits e.g. 601123  **Note:** This field is optional, can be set to “0” by default if there isn’t a canister used |
| 8 | Currency | CHAR | 3 | Currency used  **In-scope**  ZAR: South African Rand  **Out-of-scope**  BWP – Botswana Pula  LSL – Lesotho Loti  NAD – Namibian Dollar |
| 9 | Amount Credited | DECIMAL | 10 | Amount credited to merchant’s credit or primary account.  e.g. 10000.00 |
| 10 | Account Credited | INTEGER | 11 | Should be the amount credited to the merchant’s credit account or primary account or a GL account  Account should be equal to 11 characters. |
| 11 | Deposit Reference | CHAR | 30 | e.g. SBX72087000000176  **Note:** deposit reference is not standard for all merchants. May differ it ifs GL reference. |
| 12 | DDA/GL Trancode | INTEGER | 4 | 5042 – Credit to merchant account |
| 13 | Amount Debited | DECIMAL | 10 | Amount debited to merchant’s credit or primary account.  e.g. 10000.00 |
| 14 | Account Debited | INTEGER | 11 | Should be the GL account debited for the credited account. Account should be equal to 11 characters.  e.g. 91001112104 |
| 15 | Deposit Reference | CHAR | 30 | e.g. SBX72087000000176  **Note:** deposit reference is not standard for all merchants. May differ it ifs GL reference. |
| 16 | GL Trancode | INTEGER | 4 | 9998 – Debit to GL account.  9999 – Credit to GL account. |
| 17 | VODS trace ID | CHAR | 12 | The VODS Trace ID for the transaction processed. |
| 18 | VODS Status Code | ALPHA | 8 | VODS status code should be tied to the |

The received message will be logged in SMB\_OTHER MESSAGES described hereafter:

| **Field name** | **Type** | **Length** |
| --- | --- | --- |
| Message Type | VARCHAR2 | 2 |
| Bag Number | VARCHAR | 14 |
| Device Number | VARCHAR | 15 |
| Transaction ID | VARCHAR | 10 |
| Received message | VARCHAR | 150 |
| Result | VARCHAR | 4 |
| Container Type | VARCHAR | 1 |
| Transmission Date | DATE | 26 |
| Canister Number | VARCHAR | 6 |
| Currency | VARCHAR | 3 |
| Cash Centre Type | VARCHAR | 4 |
| Cash Centre Code | VARCHAR | 4 |
| Total Amount | NUMBER | 10 |
| Total Notes | NUMBER | 10 |
| Total Coins | NUMBER | 10 |
| Denomination1 | NUMBER | 5 |
| Denomination2 | NUMBER | 5 |
| Denomination3 | NUMBER | 5 |
| Denomination4 | NUMBER | 5 |
| Denomination5 | NUMBER | 5 |
| Denomination6 | NUMBER | 5 |
| Denomination7 | NUMBER | 5 |
| Denomination8 | NUMBER | 5 |
| Denomination9 | NUMBER | 5 |
| Denomination10 | NUMBER | 5 |
| Denomination11 | NUMBER | 5 |
| Denomination12 | NUMBER | 5 |
| Denomination13 | NUMBER | 5 |
| Denomination14 | NUMBER | 5 |
| Denomination15 | NUMBER | 5 |
| Amount Credited | DECIMAL | 10 |
| Account Credited | INTEGER | 11 |
| Deposit Reference | CHAR | 30 |
| DDA/GL Trancode | INTEGER | 4 |
| Amount Debited | DECIMAL | 10 |
| Account Debited | INTEGER | 11 |
| Deposit Reference | CHAR | 30 |
| GL Trancode | INTEGER | 4 |
| VODS trace ID | CHAR | 12 |
| VODS Status Code | ALPHA | 8 |
| Date create | DATE | 14 |
| Date update | DATE | 14 |

# SmartBox transaction control

Smartbox web services message controls are divided on two types, the integrity checks and the transaction verification checks.

Each message must be controlled by a list of controls defined in the trans\_control\_Param screen (Parameters > Bank parameters > Clearing > Bank control parameters (Trans\_control\_param)).

To achieve this objective the screen will be improved to specify the SmartBox controls by adding a new column with checkboxes to specify if the control is selected for Smartbox. the figure below shows the new version of the screen.

