



Information Technology

POS ACQUIRING DOLLAR Settlement

System Design Specification

1. INTRODUCTION

The document was developed to document the enhancement of Pos Acquiring Dollar Visa process to optimize manual work effort and employ Robotic workforce.

1.1. Purpose

The RPA solution will be expected to eliminate a lot of the manual steps currently involved in the process For Pos Acquiring Dollar Visa Settlement Banking transactions. Bot first checks for pending task, its resumes if any is found else the bot first download three reports from the File server and necessary filtering are done. Performs all necessary data manipulations. The bot goes ahead to build an upload file. If the account is balanced or not, it notifies via email with the generated report.

1.2. Overview

This document gives the overview of important parts of the system to be built and the means of communication between each component to be built. The document also gives the overview of responsibility of each component to be built and the entry and exit criteria

1.3. References

The Functional Requirement document provided by the internal audit team is one of the documents used for this integration.

1.4. Definition and Acronyms

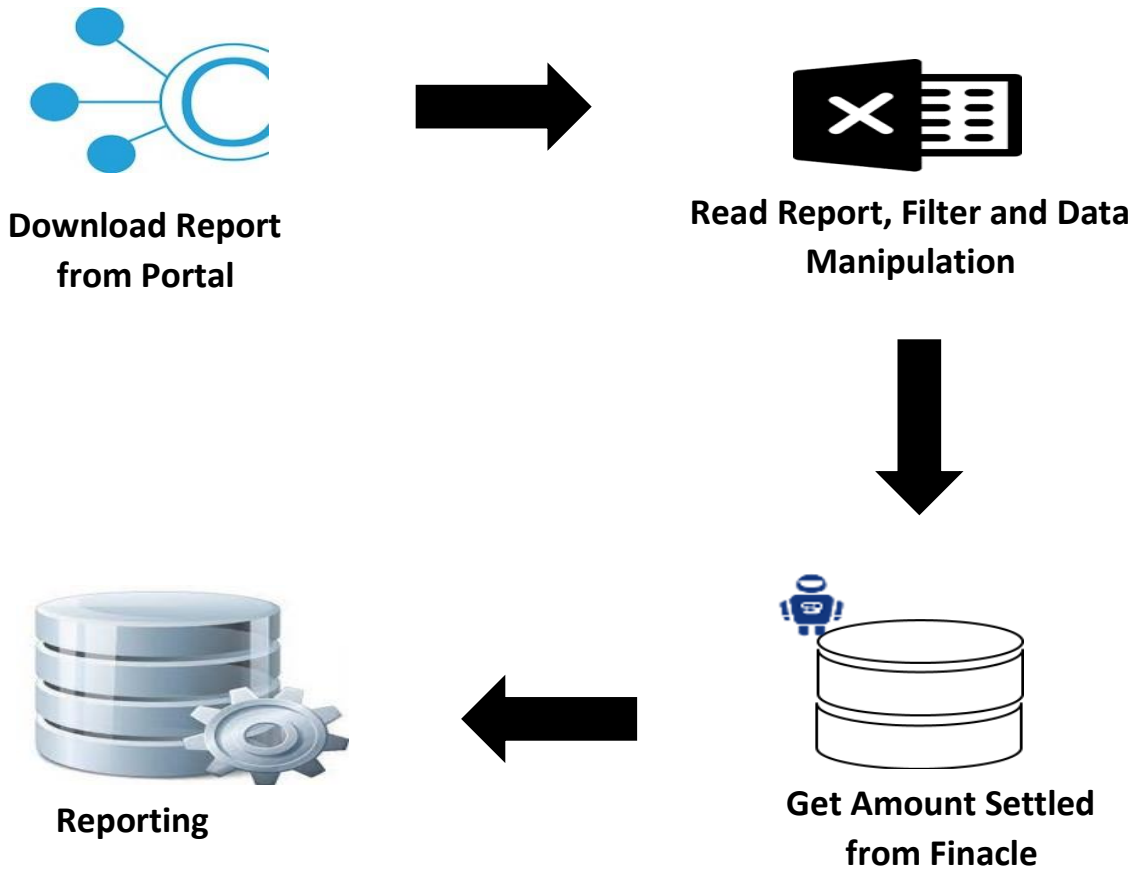
No	Abbreviation/Term	Description
1	RPA	Robotics Process Automation
2	Bot	Virtual Worker
3	SDD	Solution Design Document
4	PDD	Process Design Document
5	TBO	Transaction Banking Operation
6	FIP	First Instant Pay
7	EFT	Electronic Funds Transfer

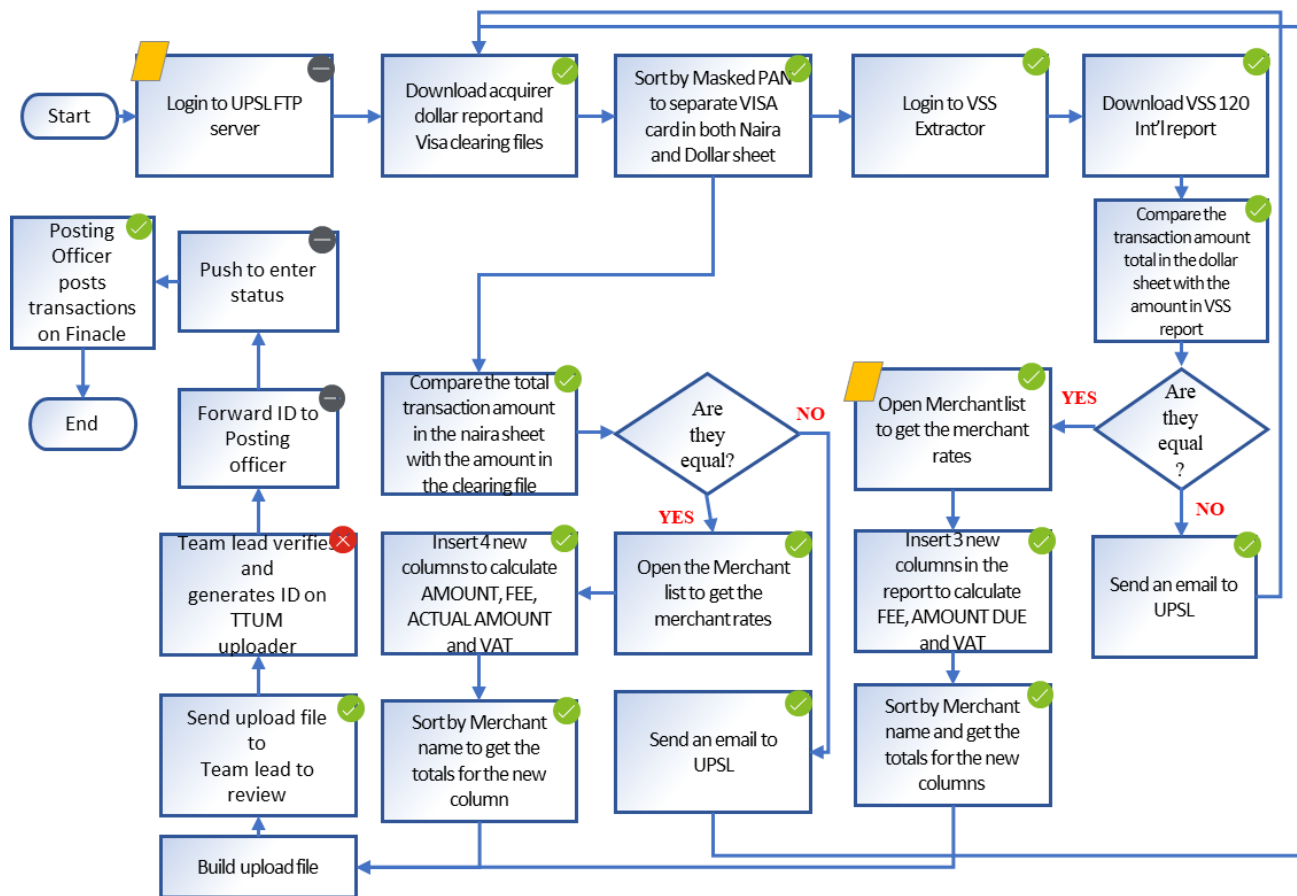
2. SYSTEM OVERVIEW

This document defines the high-level requirements for the proposed Agency Banking Visa settlement process. It will be used as the basis for the following activities:

- Creating solution designs
- Defining functional requirements
- Developing test plans, test scripts, and test cases
- Determining project completion
- Assessing project success

3. SYSTEM ARCHITECTURE





Current state for Agency Banking Process

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POS ACQUIRING DOLLAR

1. Bot opens browser and Generate Report
 - Bot goes to UPSL FTP server address
 - Bot uses FTP credentials to access the platform and download FBN ACQ dollar report, MIGS report and VISA clearing files
2. Processing settlement template
 - For the Dollar sheet
 - i. Sort by Masked PAN to separate VISA from Mastercard
 - ii. Bot to sort by amount to separate debit (-) and credit (+) for both Visa and MasterCard
 - iii. Bot to sort by retailer name
 - iv. Bot to Navigate to VSS Extractor address
 - Bot to input Login ID and password
 - Click on VSS report
 - Select International
 - Enter report date (t-1)
 - Click VSS 120 summary settlement report
 - Click the dropdown and select Excel to download the report
 - ii. Sum TRANAMOUNT for Visa credit and compare with the Business transaction total on the 100039563 PURCHASE row (cell S71) on VSS 120

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	R	S	T	U	V	W	X	Y	Z	AA	AE
55					ATM CASH				100039563 FIRST BANK NGE	540	566				150	1,575,400.00	CR		3,919.36	CR				108.35	DB
56					Business Transaction Total				100039563 FIRST BANK NGE	540	566														
57					Business Transaction Net				100039563 FIRST BANK NGE	540	566														
58					Business Cycle Total				100039563 FIRST BANK NGE	540	566			ORIGINAL	146	1,629,200.00	CR		3,919.36	CR					
59									100039563 FIRST BANK NGE	540	566			ORIGINAL RVSL	4	44,800.00	DB		0.00						
60									100039563 FIRST BANK NGE	540	566														
61									100039563 FIRST BANK NGE	540	566														
62					Business Mode Total				100039563 FIRST BANK NGE	540	566				197	3,991,386.43	CR		9,763.06	CR					
63					Business Mode Net				100039563 FIRST BANK NGE	540	566														
64									100039563 FIRST BANK NGE	540	566														
65									100039563 FIRST BANK NGE	540	566														
66									100039563 FIRST BANK NGE	540	566														
67									100039563 FIRST BANK NGE	540	566														
68									100039563 FIRST BANK NGE	540	566														
69					840 PURCHASE				100039563 FIRST BANK NGE	540	540			ORIGINAL SALE	12	24,933.09	CR		24,933.09	CR					
70					Detail Total				100039563 FIRST BANK NGE	540	540				12	24,933.09	CR		24,933.09	CR					
71					Business Transaction Total				100039563 FIRST BANK NGE	540	540														
72					Business Transaction Net				100039563 FIRST BANK NGE	540	540														
73									100039563 FIRST BANK NGE	540	540														
74									100039563 FIRST BANK NGE	540	540														
75									100039563 FIRST BANK NGE	540	540														
76					Detail Total				100039563 FIRST BANK NGE	540	540			ORIGINAL	1	272.00	DB		0.00						
77					Business Transaction Total				100039563 FIRST BANK NGE	540	540				1	272.00	DB		0.00						
78					Business Transaction Net				100039563 FIRST BANK NGE	540	540														
79					Business Transaction Total				100039563 FIRST BANK NGE	540	540														

- iii. Compare the count on the acquirer dollar report for the VISA credit with the count on cell R71
- iv. Sum transaction amount for debit and compare the total and count with the Merchandise credit total on cell S78 on VSS 120
- v. Identify the difference in count and amount
- vi. If there is a difference between the total and count from acquirer dollar report and VSS 120, identify the difference in amount
 - Navigate to MIGS report
 - Copy the dollar transactions and total the ORIGINAL AMOUNT

DESTLOC	ORIGCLE	ORIGCLEAR	AMT
598	132115156	21	50000
598	132118161	21	4000
598	132110145	21	10000
598	132109144	21	10000
598	132108142	21	10000

- Compare the ORIGINAL AMOUNT TOTAL with the difference identified

TRANS 18 NOVEMBER UPPD 19 NOVEMBER 2021 (FBN ACQ DOLLAR) - Excel

File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

Queries & Connections Properties Filter Sort Advanced Text to Columns Flash Fill Remove Duplicates Validation Data Tools Consolidate Relationships Manage Data Model What-If Analysis Forecast Sheet Group Ungroup Subtotal Outline

Get From Web From Table/Range Recent Sources Existing Connections Refresh All Edit Links Queries & Connections Sort & Filter

Get & Transform Data

Q22 =Q21+Q16

	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1	RETAILER	TERMINAL	TERMINAL	MERCH	EXRATE	TOTAL M	TRANAMOUNT	NAIRA RATE	NAIRA AMOUNT	AMT DUE NAIRA				AMT DUE DOLLAR	PTSA	PTSP	SWITCH	TERMINAL OWNER	ACQU
2	DESIGN TF	2011790F	DESIGN TF	20269353C	413.5704	3.50	272.00	413.5704	-112,491.15	-108,553.96				-262.48	-0.15	-0.51	-0.10		-0.51
3																			
4																			
5	LILYGATE	2011170W	LILYGATE	203173503	413.5704	3.00	53.03	413.5704	21,931.64	21,273.69				51.44	0.03	0.10	0.02		0.10
6	RADISSON	201104DL	RADISSON	201520066	413.5704	3.00	27.95	413.5704	11,559.29	11,212.51				27.11	0.02	0.05	0.01		0.05
7	RADISSON	201103DL	RADISSON	201520066	413.5704	3.00	134.05	413.5704	55,439.11	53,775.94				130.03	0.08	0.25	0.05		0.25
8	RADISSON	201103DL	RADISSON	201520066	413.5704	3.00	140.21	413.5704	57,986.71	56,247.10				136.00	0.08	0.26	0.05		0.26
9	RADISSON	201103DL	RADISSON	201520066	413.5704	3.00	188.55	413.5704	77,978.70	75,639.34				182.89	0.11	0.35	0.07		0.35
10	RADISSON	201103DL	RADISSON	201520066	413.5704	3.00	294.00	413.5704	121,589.70	117,942.01				285.18	0.17	0.55	0.11		0.55
11	RADISSON	201103DL	RADISSON	201520066	413.5704	3.00	300.00	413.5704	124,071.12	120,348.99				291.00	0.17	0.56	0.11		0.56
12	RADISSON	201103DL	RADISSON	201520066	413.5704	3.00	404.55	413.5704	167,309.90	162,290.61				392.41	0.23	0.76	0.15		0.76
13	RADISSON	201104DL	RADISSON	201520066	413.5704	3.00	1,000.00	413.5704	413,570.40	401,163.28				970.00	0.56	1.88	0.38		1.88
14	RADISSON	201103DL	RADISSON	201520066	413.5704	3.00	2,390.75	413.5704	988,743.43	959,081.12				2,319.03	1.34	4.48	0.90		4.48
15																			
16							4,933.09												
17							12.00												
18							24,933.09												
19							10000	840	10000	840	10000						840		
20							10000	840	10000	840	10000						840		
21							20,000.00												
22							24,933.09												
23																			
24																			
25																			
26																			
27																			
28	RADISSON	201103DL	RADISSON	201520066	413.46	3.00	-161.30	413.4600	-66,691.10	-64,690.37				-156.46	-0.09	-0.30	-0.06		-0.30
29	LILYGATE	2011170W	LILYGATE	203173503	413.46	3.00	105.30	413.4600	43,537.34	42,231.22				102.14	0.06	0.20	0.04		0.20

ALL EXRATE NAIRA DOLLAR DOLLAR (2) NAIRA (2) NAIRA (3) DOLLAR (3)

- If it is not the same, send a mail to the process owner
- If it is the same, find the new total (TRANAMOUNT from the ACQ Dollar report plus ORIGINAL AMOUNT from MIGS report)

vii. Open the MERCHANT ACCOUNT LIST to get the USD RATES for the merchant names

- viii. Insert 3 new columns in the acquirer dollar report after AMOUNT DUE NAIRA to calculate FEE (ORIGINAL AMT * RATE), AMOUNT DUE MERCHANT (ORIGINAL AMT – FEE) and VAT (7.5/107.5*FEE)
- ix. Separate the transactions by the merchant names and find the totals of the FEE and AMOUNT

- For the Naira sheet,
 - i. Sort by Masked PAN to separate VISA from Mastercard
 - ii. Sort by retailer name
 - iii. Open the Visa clearing files
 - iv. In the USD sheet in the visa clearing files, sort by merchant name
 - v. Separate the entries that have the same merchant's name with what is on the naira sheet of the acquirer's dollar report

FBN_VISA_CLEARING_FILES_29_11_2021 - Excel																									
File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do																									
G59 360720																									
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X		
5	33424367 FBN_VISA	133215984745771413	#N/A	10000	566	784	#####	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999		
6	33424367 FBN_VISA	133215984745771413	#N/A	5000	566	784	#####	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999		
7	33424367 FBN_VISA	133215984745771413	#N/A	10500	566	784	#####	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999		
8	33424367 FBN_VISA	133215984745771413	#N/A	11000	566	784	#####	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999	478839999		
9	33424367 FBN_VISA	133206494745771413	#N/A	6500	566	840	#####	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022		
10	33424367 FBN_VISA	133206494745771413	#N/A	58500	566	840	#####	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022	461046022		
11	33424367 FBN_VISA	1332088264745771413	#N/A	75000	566	372	#####	431947	431947	431947	431947	431947	431947	431947	431947	431947	431947	431947	431947	431947	431947	431947	431947		
12	33424367 FBN_VISA	1332151664745771413	#N/A	14568.75	566	250	#####	497653	497653	497653	497653	497653	497653	497653	497653	497653	497653	497653	497653	497653	497653	497653	497653		
13	33424367 FBN_VISA	1332012324745771413	#N/A	34000	566	788	#####	491242	491242	491242	491242	491242	491242	491242	491242	491242	491242	491242	491242	491242	491242	491242	491242		
14	33424367 FBN_VISA	1332080374745771413	#N/A	7500	566	764	#####	453215	453215	453215	453215	453215	453215	453215	453215	453215	453215	453215	453215	453215	453215	453215	453215		
15																									
16																									
17																									
18																									
19	33424367 FBN_VISA	133214864745771413	#N/A	360,720.00	566	840	#####	438857	438857	438857	438857	438857	438857	438857	438857	438857	438857	438857	438857	438857	438857	438857	438857		
20	33424367 FBN_VISA	133216264745771413	#N/A	14,000.00	566	36	#####	405221	405221	405221	405221	405221	405221	405221	405221	405221	405221	405221	405221	405221	405221	405221	405221		
21	33424367 FBN_VISA	1332089164745771413	#N/A	310,000.00	566	840	#####	414720	414720	414720	414720	414720	414720	414720	414720	414720	414720	414720	414720	414720	414720	414720	414720		
22	33424367 FBN_VISA	1332103764745771413	#N/A	8,500.00	566	840	#####	440066	440066	440066	440066	440066	440066	440066	440066	440066	440066	440066	440066	440066	440066	440066	440066		
23	33424367 FBN_VISA	1332105974745771413	#N/A	108,400.00	566	826	#####	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865		
24	33424367 FBN_VISA	1332118274745771413	#N/A	347,332.04	566	756	#####	490117	490117	490117	490117	490117	490117	490117	490117	490117	490117	490117	490117	490117	490117	490117	490117		
25	33424367 FBN_VISA	1332188674745771413	#N/A	23,500.00	566	840	#####	423327	423327	423327	423327	423327	423327	423327	423327	423327	423327	423327	423327	423327	423327	423327	423327		
26	33424367 FBN_VISA	1332146274745771413	#N/A	9,200.00	566	826	#####	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865	465865		
27	33424367 FBN_VISA	1332118974745771413	#N/A	15,500.00	566	826	#####	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130		
28	33424367 FBN_VISA	1332011274745771413	#N/A	5,000.00	566	826	#####	492181	492181	492181	492181	492181	492181	492181	492181	492181	492181	492181	492181	492181	492181	492181	492181		
29	33424367 FBN_VISA	1332192474745771413	#N/A	13,100.00	566	840	#####	433718	433718	433718	433718	433718	433718	433718	433718	433718	433718	433718	433718	433718	433718	433718	433718		
30	33424367 FBN_VISA	1332040674745771413	#N/A	5,700.00	566	826	#####	459654	459654	459654	459654	459654	459654	459654	459654	459654	459654	459654	459654	459654	459654	459654	459654		
31	33424367 FBN_VISA	13321213474745771413	#N/A	32,000.00	566	826	#####	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130		
32	33424367 FBN_VISA	13321213474745771413	#N/A	1,252,952.04	566	826	#####	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130	475130		
33																									
34																									
35																									
36																									

vi. The total transaction amount in both reports should be the same

TRANS 28 NOVEMBER UPD 29 NOVEMBER 2021 (FBN ACQ DOLLAR) - Excel

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Get DataFrom Text/CSVFrom WebFrom Table/RangeRecent SourcesExisting ConnectionsRefresh AllQueries & ConnectionsPropertiesEdit LinksQueries & Connections

SortFilterAdvancedSort & Filter

ClearReapplyText to ColumnsFlash FillRemove DuplicatesValidationData ToolsConsolidateRelationshipsManage Data ModelWhat-If ForecastAnalysis - ForecastGroup Ungroup SubtotalOutline

Show DetailHide Detail

Q214000

	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF		
1	TERMINAL	MERCHANT	EXTRATE	TOTAL M	TRANAMOUNT	NAIRA RATE	NAIRA AMOUNT	DOLLAR AMOUNT	AMT DUE NAIRA	AMT DUE DOLLAR	PTSA	PTSP	SWITCH	TERMINAL OWNER	ACQUIRER	MASKEDP	ACQUIRER	UP DOLLAR	ACCS	ISS	HD	SIGN
2	EKO HOTEL	200825041	413.5396	3.75	14,000.00	1.0000	14,000.00	33.85	13,475.00	32.58	0.02	0.06	0.01	0.06	0.02	405221***	FIRST BAN	2031282943	VISA	+		
3	EKO HOTEL	200825041	413.5396	3.75	310,000.00	1.0000	310,000.00	749.63	298,375.00	721.51	0.42	1.41	0.28	1.41	0.42	414720***	FIRST BAN	2031282943	VISA	+		
4	RADISSON	201529791	413.5396	3.00	23,500.00	1.0000	23,500.00	56.83	22,795.00	55.12	0.03	0.11	0.02	0.11	0.03	423327***	FIRST BAN	2031282943	VISA	+		
5	RADISSON	201529791	413.5396	3.50	13,100.00	1.0000	13,100.00	31.68	12,641.50	30.57	0.02	0.06	0.01	0.06	0.02	433718***	FIRST BAN	2031282943	VISA	+		
6	EKO HOTEL	200825041	413.5396	3.75	360,720.00	1.0000	360,720.00	872.27	347,193.00	839.56	0.49	1.64	0.33	1.64	0.49	438857***	FIRST BAN	2031282943	VISA	+		
7	RADISSON	201529791	413.5396	3.00	8,500.00	1.0000	8,500.00	20.55	8,245.00	19.94	0.01	0.04	0.01	0.04	0.01	440068***	FIRST BAN	2031282943	VISA	+		
8	RADISSON	201529791	413.5396	3.50	5,700.00	1.0000	5,700.00	13.78	5,500.50	13.30	0.01	0.03	0.01	0.03	0.01	459654***	FIRST BAN	2031282943	VISA	+		
9	RADISSON	201529791	413.5396	3.00	108,400.00	1.0000	108,400.00	262.13	105,148.00	254.26	0.15	0.49	0.10	0.49	0.15	465865***	FIRST BAN	2031282943	VISA	+		
10	RADISSON	201529791	413.5396	3.50	9,200.00	1.0000	9,200.00	22.25	8,878.00	21.47	0.01	0.04	0.01	0.04	0.01	465865***	FIRST BAN	2031282943	VISA	+		
11	RADISSON	201529791	413.5396	3.50	15,500.00	1.0000	15,500.00	37.48	14,957.50	36.17	0.02	0.07	0.01	0.07	0.02	475130***	FIRST BAN	2031282943	VISA	+		
12	RADISSON	201529791	413.5396	3.00	32,000.00	1.0000	32,000.00	77.38	31,040.00	75.06	0.04	0.15	0.03	0.15	0.04	475130***	FIRST BAN	2031282943	VISA	+		
13	RADISSON	201529791	413.5396	3.00	347,332.04	1.0000	347,332.04	839.90	336,912.08	814.70	0.47	1.57	0.31	1.57	0.47	490117***	FIRST BAN	2031282943	VISA	+		
14	RADISSON	201529791	413.5396	3.50	5,000.00	1.0000	5,000.00	12.09	4,825.00	11.67	0.01	0.02	0.00	0.02	0.01	492181***	FIRST BAN	2031282943	VISA	+		
15																						
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ALLEXRATENAIRA

DOLLARDOLLAR (2)NAIRA (2)NAIRA (3)

RETAILER	TERMINAL	EXRATE	TRANAMOUNT	NAIRA RATE	NAIRA AMOUNT	DOLLAR AMOUNT	AMT DUE NAIRA	AMT DUE DOLLAR
EKO HOTE	EKO HOTE	3.75	14,000.00	1,000.00	14,000.00	33.85	13,475.00	33.85
EKO HOTE	EKO HOTE	3.75	310,000.00	1,000.00	310,000.00	749.63	298,375.00	749.63
EKO HOTE	EKO HOTE	3.75	360,720.00	1,000.00	360,720.00	872.27	347,193.00	872.27

3. Build the upload file

- Dollar sheet
 - i. Copy the TRANAMOUNT total
 - ii. Copy AMOUNT DUE MERCHANT for each individual merchant
 - iii. Copy and paste the difference between FEE and VAT
 - iv. Copy and paste VAT
- Naira sheet
 - i. Copy AMOUNT DUE DOLLAR
 - ii. Copy the ACTUAL AMOUNT DUE DOLLAR (Column 3) for each retailer and paste in the upload file
 - iii. Copy and paste the difference between FEE and VAT
 - iv. Copy and paste VAT

account	NARRATION	Amount	type
48919400007302	VISA MERCHANT FUND 29.11.21	1,531.44	D
2012125760	VISA LA COURT 29.11.21	347.40	C
2015200662	VISA RADISSON BLU 29.11.21	1,136.30	C
48955099004502	VISA POS ACQ FEE 29.11.21	44.41	C
48933104000602	VISA POS ACQ FEE VAT 29.11.21	3.33	C
48919400007302	VISA MERCHANT FUND 29.11.21	3,029.82	D
2015200662	VISA RADISSON BLU 29.11.21	1,332.85	C
2012766536	VISA EKO HOTEL 29.11.21	1,597.80	C
48955099004502	VISA POS ACQ FEE 29.11.21	92.25	C
48933104000602	VISA POS ACQ FEE VAT 29.11.21	6.92	C
999999999999	end		

4. If the upload file does not balance, send a mail to the process owner
5. If it balances, Bot uploads the file on the RPA file server
6. Team lead reviews it
7. Bot invokes the posting process on Finacle

SYSTEM SPECIFICATION

3.2.1. Network system

Network software and protocols for systems to communicate:

- a. TCP/IP
- b. HTTP
- c. HTTPS
- d. SFTP

3.2.2. Authentication Credentials

Valid authentication credentials are required to run software from third party vendors:

- a. To use application development tools
- b. To use web server, application server and database software in development, test and
- c. production mode

3. DatabaseServer

Oracle Server

4. Client Computers

Windows (Preferred) client computers

5. Production support systems

Web server computer(s) and related hardware support.


4. REQUIREMENT MATRIX

Requirement	Fulfilling component
Download Report from the FTP File Server	Bot
Send Upload file Report	Bot

5. DOCUMENT CHANGE RECORD

Date	Version	Author	Change Details
05/09/2022	1.0	Bakare Sodiq	Pos Acquiring Dollar

CREATEDBY

Name	Department/ Unit	Signature	Date
Bakare Sodiq	Developer/RPA		05/09/2022

REVIEWEDBY

Name	Department/ Unit	Signature	Date

APPROVALS

Name	Department	Designation	Signature	Date
	IT			