Project:

System: NPDA

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Acc/Fin. Service	**503-100-C-FRS-TO-BE-AccFinSys-v2**
Positioning-To-Be Architecture	**503-100-C-Positioning-TO-BE-Architecture-V2**

Table of Contents

1. Introduction

1.1 Document Purpose

The purpose of this document is to demonstrate how the consumer funds deposited in the NPDA bank account are accounted for in the General Ledger accounting system. The amounts deposited in the NPDA bank account are meant for distribution to creditors; debt counsellors; legal fees and NPDA fees.

There is a requirement to establish a general ledger for the NPDA system to ensure proper accounting is followed and adhered to. So this document will be used to design new general ledger accounting processes and also to improve on the working the existing process.

1.2 Project Background

This project is initiated by the National Credit Regulator (NCR) where the each National Payment Distribution Agency (NPDA) must keep a record of the general ledger for all transaction entries.

The scope of work is to deliver accounting services as basic building block and to separate and decouple its concerns from non-financial concerns. An accounting system that will record all transactions of the PDA into the general ledger using contra-entries.

1.3 Business Objectives

- The aim is to have a complete financial system solution with a full general to handle all NPDA transaction types. Accurate processing of system contra entries in accordance with generally accepted accounting principles.
- Currently there is a system in place which does some of the required functions; however it falls short of fulfilling the Service Level Agreement from the NCR in addition it must also comply with Generally Accepted Accounting Principles (GAAP).
- GAAP is a framework of accounting standards, rules and procedures defined by the professional accounting industry.

1.3.1 Accounting Design Principles

- Consumer account will start with an opening balance. Information will be extracted to determine how much has been distributed vs. how much is owed.

I. Received but not distributed Money

II. Received and Distributed Money

III. Deposits vs. Distribution

IV. Extractable from NPDA – BOA's run SQL Scripts to extract amount deposited vs. actual amount distributed.

- DC Balance will be the amount a DC owes the PDA for Fees, in the current system this is a manual process.
- This will be automated by having a front end screen where a financial controller can add the amount a DC owes to the PDA. This will then create an opening balance in order to determine what is outstanding.
- Unidentified Balance; deposits are currently reported on, extraction from current system will be done to determine the opening balance.
- The following are not included in the scope

V. Obligation Balance.

VI. Legal & PDA Fee Balance

VII. Recoveries

- The National Payment Distribution Agency (NPDA) business account general ledger is not part of the scope.

1.3.2 Business Events from the NPDA

- The NPDA AS-IS system keeps track of business events by creating and updating records in the BankAccountStmtTxReconAudit Table.
- These business events need to flow out of the NPDA system and a design decision has been taken to use database triggers to trap these events and publish to a MS Message queue.
- An External Business Event Handler (TO-BE solution) will be developed to consume the messages from the MS Message queue and process these messages appropriately.

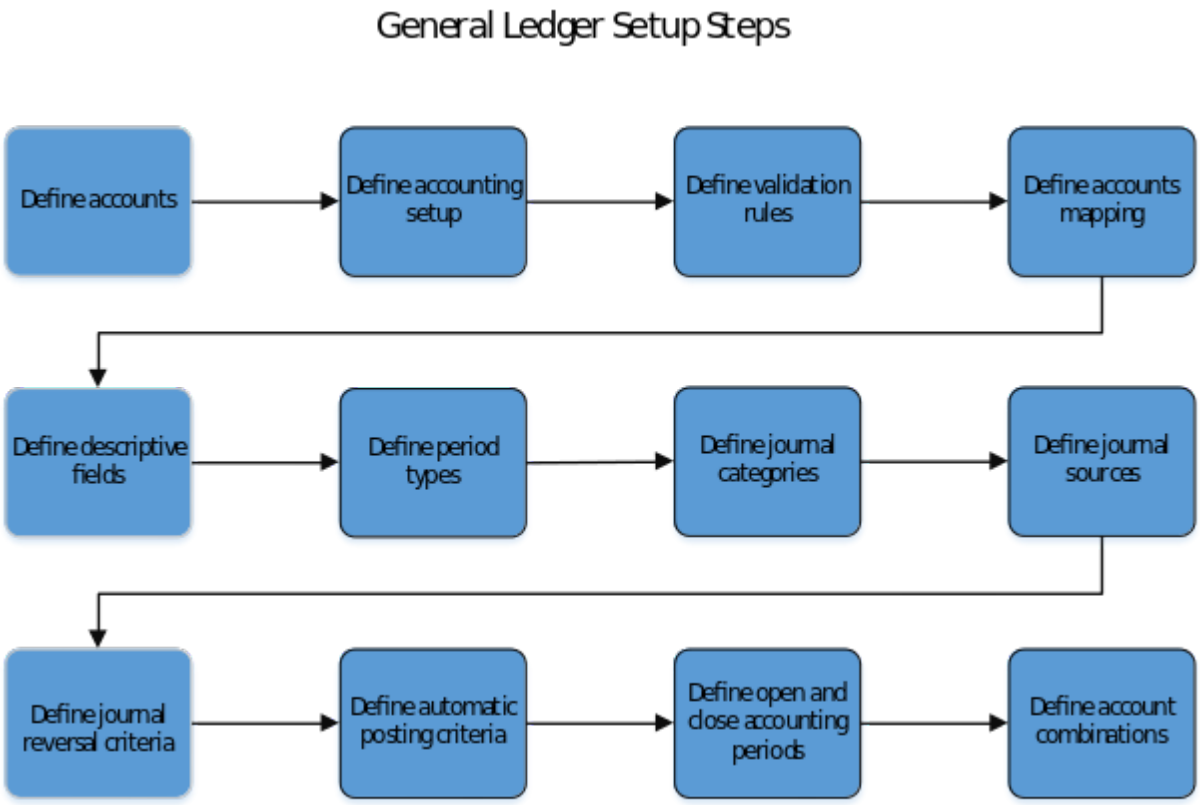
1.4 Contra-Entry Principles

- The system general ledger accounting system will allow for Contra-Entry Recording of Accounting Transactions.
- Contra-entry implies that transactions are always recorded using two sides, debit and credit.

- Debit refers to the left-hand side and credit refers to the right-hand side of the journal entry or account.
- The sum of debit side amounts should equal to the sum of credit side amounts.
- A journal entry is called "balanced" when the sum of debit side amounts equals to the sum of credit side amounts.

1.5 General Ledger Setup

In order to meet the business objectives there is a need to setup the general ledger and the following diagram specify the steps to be followed.



In following the steps mentioned above where the rules are clearly defined; the organisation will be in a position to process the various system transactions.

1.6 Transaction Types Processing

In demonstrating how the general ledger will work; there are two transaction types selected for processing; ***Successful Distribution*** and ***Unidentifieds***.

1.6.1 General Ledger Accounts

The following table lists the general ledger accounts that are currently available on the existing system. These accounts are used in the transaction types identified in this document.

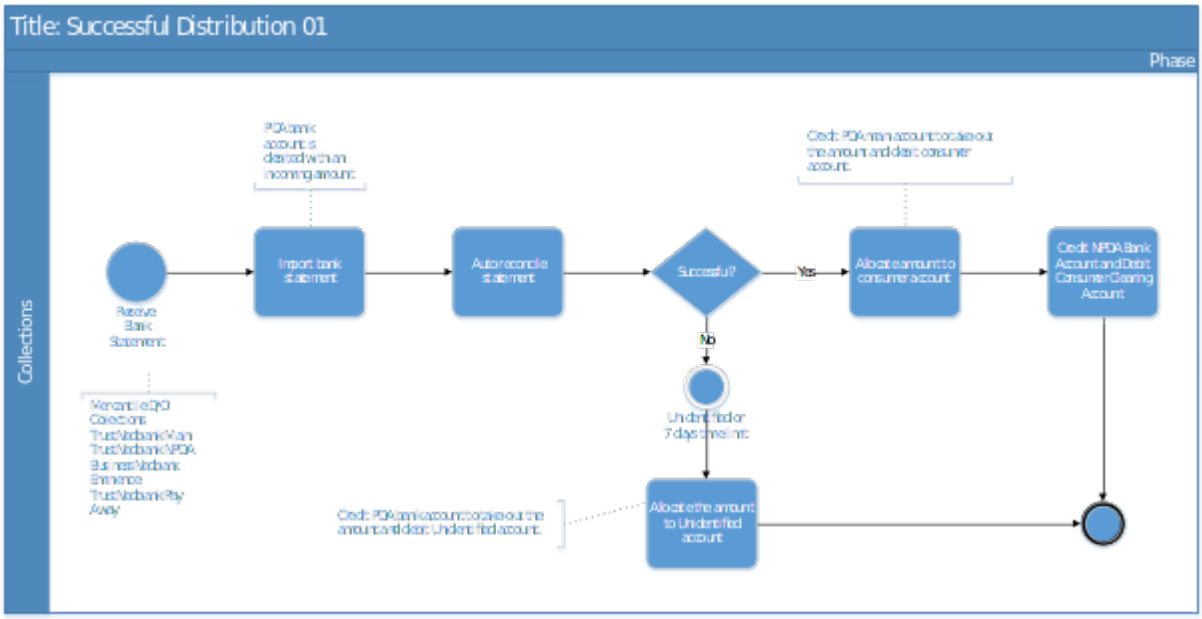
GLAccount_pk	Description	BankAccount_fk	Purpose / Usage
10	Mercantile D/O Collections Trust / **(NPDA Bank account)**	13	GL Account that represents a bank account - An account at Mercantile where all our debit orders are received
11	Nedbank Main Trust / **(NPDA Bank account)**	9	GL Account that represents a bank account - Nedbank trust account - the first one we had for this version of the NPDA system
13	Nedbank Eminence Trust / **(NPDA Bank account)**	16	GL Account that represents a bank account - Nedbank trust account we opened when we took on the Eminence business (late 2013)
15	Unidentifieds	24	GL Account that represents a bank account - New SLA unidentifieds account
20	Consumer Clearing Account	NULL	Not a bank account - this is a GL Account - An account per consumer shows summaries of all DR/CR
31	Creditor Account	NULL	Not a bank account - this is a GL Account - An account per consumer obligation where funds are paid to

1.6.2 Successful Distribution

The Consumer clearing general ledger account is established for each consumer by transferring outstanding balances for each credit provider.

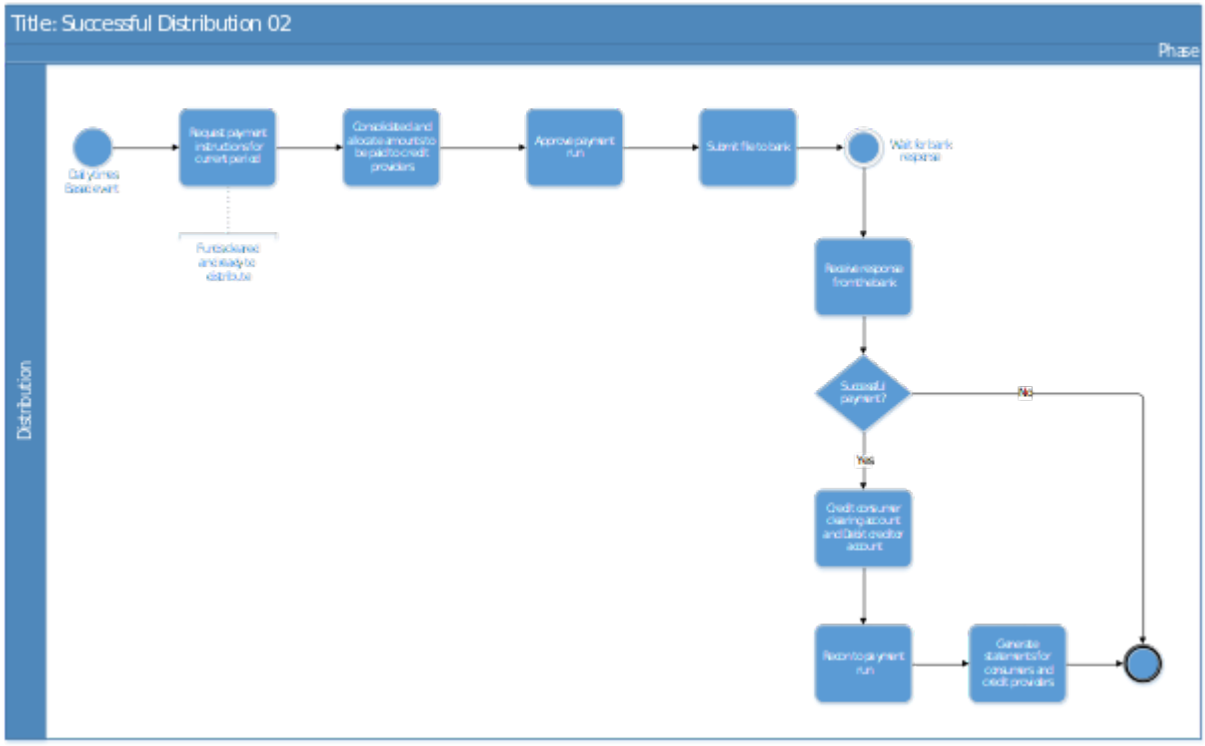
- Successful Distribution general ledger contra-entries processing
    - The amount is successfully reconciled from the bank statement to the consumer.
    - The general ledger contra-entry is made by transferring the reconciled amount from the NPDA bank account to the consumer clearing account.

Action	Account	Reason / explanation
Debit	Consumer clearing account	The amount involved must be transferred to the consumer clearing account
Credit	NPDA bank account	The amount involved must be transferred from the bank account



- When the payment run to the bank has been successfully reconciled with the bank response of successful payments.
- The general ledger contra-entry is made by transferring funds from the customer clearing account to the creditor account

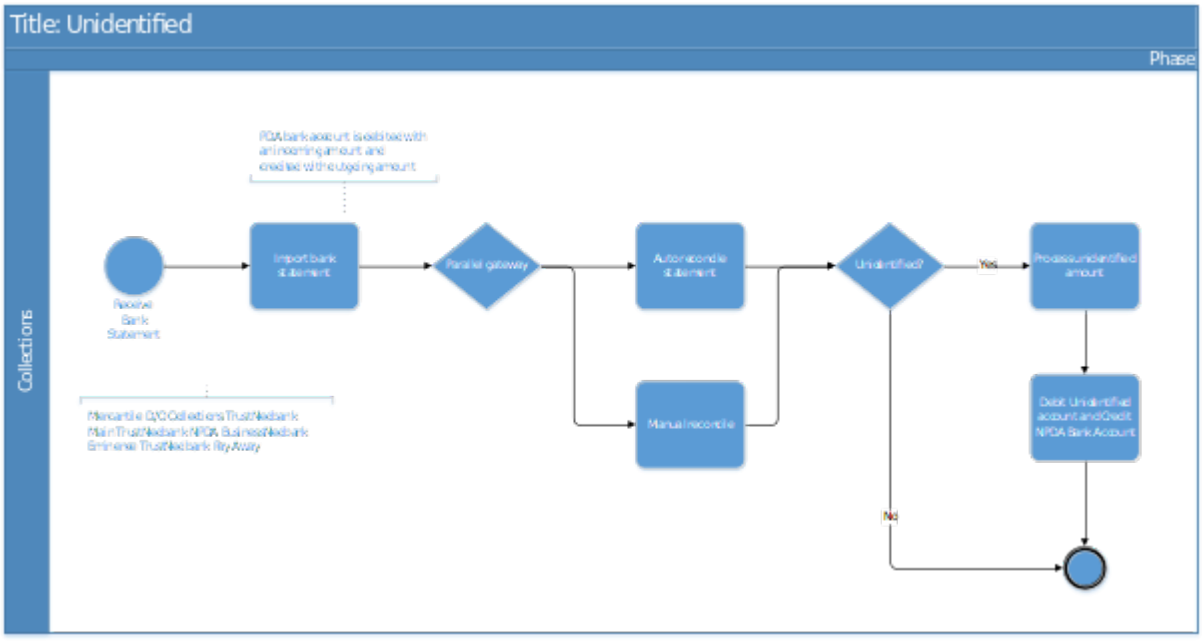
Action	Account	Reason / explanation
Debit	Creditor account	The amount involved must be transferred to the creditor account indicating payment.
Credit	Consumer clearing account	The amount involved must be transferred from the consumer clearing account



1.6.3 Unidentifieds

- Unidentifieds general ledger contra-entry processing.
    - The amount is unidentified from the bank statement to a consumer.
    - The amount cannot be reconciled after seven days
    - The general ledger contra-entry is made by transferring the unidentified amount from the NPDA bank account to the unidentifieds account.

Action	Account	Reason / explanation
Debit	Unidentifieds account	The amount involved must be transferred to the unidentifieds account as unidentifieds.
Credit	NPDA bank account	The amount involved must be transferred from the NPDA bank account



1.7 Required Information

- The required data is available on the system and it is required when general ledger accounts are being set up and configured for the new system. The account balances will be transferred from this existing system.
- The following table shows some of the data which is available on the current system and is generated to form existing reports.
- This data will be used to identify different transaction types which will be processed by the general ledger. The key is to identify the different transaction types to be able to use relevant business rules for processing.

Report	Report Detail
Bank Statement	The bank statement has all deposits made to the bank account. From the bank statement auto and manual reconciliation is done. This is the process that is currently running on the system. This is a combined bank statement which shows all the deposits into the bank accounts. *The following fields are found in the bank statement:* • **BankAccountStmtTx_pk** (primary key for each record); • **BankAccountStmt_fk;** (to identify bank account where the transaction originates); • **TransactionAmount;** (the amount of the transaction);

Report	Report Detail
	• **TransactionReference**; (the reference number of the transaction) • **TransactionDate;** (date of the transaction); and • **Balance (**the balance on the bank about) Each transaction record is uniquely identified and can be tracked on the system.
Reconciliation Types	The reconciliation type shows the reconciliation types listed on the bank account statement. There are 59 reconciliation types. Each reconciliation type has a separate description see APPENDIX ONE on this document. This report caters for all types of transactions that come through the bank account having to be resolved. *The following are the fields of the reconciliation types*: • **BankAccountStmtTxReconType_pk** • **Description** – (description of the reconciliation type) • **ClearanceDays** – (number of days before the funds are cleared) • **Visible** • **Unreconcileable** This makes it easy to separate per category and apply business rules for general ledger processing.
Reconciliation	The reconciliation extract shows all the reconciled amounts from the bank statement and per reconciliation type. *The following fields are found in the reconciliation statement:* • **BankAccountStmtTx_pk** • **TransactionDate** • **TransactionReference** • **TransactionAmount** • **Description** – (this is the same description as found in Reconciliation Type Report)
Reconciliation Detail	The reconciliation detail shows all the reconciled amounts. *The following fields are found in the reconciliation detail:* • **BankAccountStmtTx_pk**

Report	Report Detail
	• **TransactionDate** • **TransactionReference** • **TransactionAmount** • **IdentityNumber** • **Description** • **Amount**
Payment Run	The payment run shows payments submitted to the bank for payments. *The fields for the report are the following:* • **PaymentRunLine_pk** • **PaymentRun_fk** • **PaymentPortal_fk** • **PDAPaymentNumber** • **AccountNumber** • **BranchCode** • **ReferenceNumber** • **Amount** • **IsBulk**

Payment Run Detail	The payment run detail report shows details of payments made.
	The fields of the report are listed below:
	• **PaymentRunLine_fk**
	• **IdentityNumber** (Customer identity number)
	• **Description** – identifies beneficiary
	  ○ Creditor
	  ○ DC Rehab Fee
	  ○ PDA Fee
	  ○ DC Negotiation Fee
	  ○ Legal Fee

Report	Report Detail
	• **CreditoName** – identifies creditor by name • **Amount**

2. Critical Performance Model

This section describes the business objectives, critical performance areas and measures.

Reference No.	Business Objective Description
BOD.001	Identify transactions types
BOD.002	Identify accounting procedure to use
BOD.003	Identify business rules to use
BOD.004	Identify transaction time constraints
BOD.005	Processing of successful transactions and exceptions
BOD.006	Accurate transaction posting
BOD.007	Adjustment of system accounts

2.1.1 Critical Performance Areas

For each Business Objective stated above there are Critical Performance Areas

Business Objective:	Critical Performance Area
Identify transactions types	
Identify accounting procedure to use	
Identify business rules to use	
Identify transaction time constraints	
Processing of successful transactions and exceptions	
Accurate transaction posting	
Adjustment of system accounts	

2.1.2 Critical Performance measures

- Currently there are 54,000 plus consumers on our system
- If each consumer makes one deposit per month the system must be able to process 54,000 deposit transaction per month.
- Of that number if assume each consumer has an average of ten payment instructions per month; that would mean the system must accurately process 594000 five hundred and ninety four thousand transactions per month.
- Out of that total number there is a percentage which are weekly payers; which also increase the number of transactions per month.

2.2 Development Hardware Requirements for POC

OS	Priority High=10 … Low = 1	Layer	Purpose	Memory in GB per VM	No of CPUs per VM	Storage required in GB per VM	Clusterable	No of Instances Vms in Cluster	Failover	No of Failover Instances
Linux	5	Gateway	Host Load Balancer for Gateway Cluster	4	4	200	N	1	Y	1
Linux	5	Gateway - Stateless	Host Gateway Services	4	4	200	Y	1	N	
Linux	6	BPM/SB	Host Load Balancer	4	4	200	N	1	Y	1
Linux	6	BPM/SB – Stateful	Host Business Process Server	4	4	500	Y	1	N	
Linux	6	BPM/SB – Stateful	Host Service Bus	4	4	500	Y	1	N	
Linux	10	Data	Host Storage Services	4	4	2000	Y	1	N	
Linux	10	Data	Host Application Services Postgres DB Schemas							

OS	Priority High=10 … Low = 1	Layer	Purpose	Memory in GB per VM	No of CPUs per VM	Storage required in GB per VM	Clusterable	No of Instances Vms in Cluster	Failover	No of Failover Instances
Linux	10	Identity	Host Identity Management Services	4	4	500	Y	1	N	
Linux	10	Governance	Host Governance Registry Services							
Linux	10	App	Host Load Balancer	4	4	200	N	1	Y	1
Linux	10	App/Acc-Fin	**Host Application Services for Accounting/Fin Services**	4	4	200	Y	1	N	
Linux	10	App/Acc-Fin	Host Application Microservices Services							
Linux	10	App/Acc-Fin	Host Application Data Services							
Linux	10	App/Acc-Fin	Host Business Rules Services							

OS	Priority High=10 … Low = 1	Layer	Purpose	Memory in GB per VM	No of CPUs per VM	Storage required in GB per VM	Clusterable	No of Instances Vms in Cluster	Failover	No of Failover Instances
Linux	5	App/CRM-CI	**Host Application Services for CRM/CI Services**	4	4	200	Y	1	N	
Linux	5	App/CRM-CI	Host Application Microservices Services							
Linux	5	App/CRM-CI	Host Application Data Services							
Linux	5	App/CRM-CI	Host Business Rules Services							
Linux	10	App/DocMan	**Host Appplication Services for Document Services**	4	4	200	Y	1	N	
Linux	10	App/DocMan	Host Alfresco							
Linux	10	App/DocMan	Host Application Microservices							

OS	Priority High=10 … Low = 1	Layer	Purpose	Memory in GB per VM	No of CPUs per VM	Storage required in GB per VM	Clusterable	No of Instances Vms in Cluster	Failover	No of Failover Instances
			Services							
Linux	10	App/DocMan	Host Application Data Services							
Linux	10	App/DocMan	Host Business Rules Services							

APPENDIX ONE

Reconciliation Types

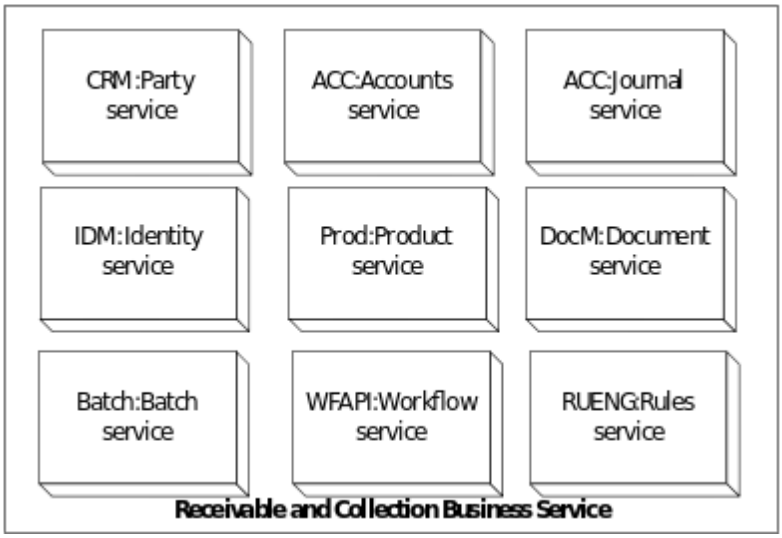
BankAccountStmtTxReconType_pk	Description	ClearanceDays	Visible	Unreconcileable
1	Zero Amount	0	0	1
2	Open/Close Balance	0	0	1
3	Cheque	7	1	1
4	Interim Deposit	0	0	1
5	Direct Deposit	0	1	1
6	Stop Order	3	1	1
7	Interim Payment	0	0	1
8	Debit Order	14	1	1
9	Deposit	0	0	1
10	Payment Unpaid	0	0	1
11	Debit Order Unpaid	0	0	1
12	Return	0	0	1
13	Third Party Return	0	0	1
14	R/D Cheque	0	0	1
15	Creditor Payment Run	0	1	1
17	Payment Account Payment	0	0	1
18	Payment Account Deposit	0	0	1
20	Payment VET Failure	0	0	1
21	Payment VET Deposit	0	0	1
22	Bank Fee	0	1	1
23	DCM Smart	0	1	1
24	Payment Unpaid Deposit	0	0	1
27	CPS Creditor Payment Run	0	1	1
28	DCM Smart Refund	0	0	1
29	Unknown Refund	0	0	1

BankAccountStmtTxReconType_pk	Description	ClearanceDays	Visible	Unreconcileable
30	Creditor Refund	0	0	1
31	Eminence Incorrect Sweep	0	0	1
32	Weekly Deposit	0	1	1
33	GL Debit	0	0	1
34	GL Credit	0	0	1
35	Incorrect Payments	0	0	1
36	Recovery	0	0	1
37	Misc Transaction	0	0	1
38	Interest Earned	0	0	1
39	Interest Transferred	0	0	1
40	Inter-Company Transfer	0	0	1
41	Unidentified - Creditor Refund	0	0	1
42	Unidentified - Direct Deposit	0	0	1
43	Unlawful Debit Order	0	0	1
44	Unlawful Debit Order Reversal	0	0	1
45	Transaction Recovery	0	0	1
46	Recovery Via PaymentRun	0	0	1
47	Unidentified Payment Run	0	0	1
48	Debit Order Unpaid - Recoverable	0	0	1
49	Debit Order Unpaid - Bulk Recoverable	0	0	1
50	Consumer Refunds - Recoverable	0	0	1
51	Creditor Refunds - Recoveries	0	0	1
52	Unidentified Funds - Recoveries	0	0	1
53	Unidentified Funds - Recoverable	0	0	1
54	Other Funds - Bulk	0	0	1
55	Debit Order Unpaid - Bulk Recovery	0	0	1
56	Incorrect Payments - Bulk Recovery	0	0	1
57	Unidentified Payment Run To Trust	0	0	1
58	ADHOC - Deposit Reversals	0	0	1
59	ADHOC - Unlawful Debit Orders	0	0	1

Business Service(s) Architectural Landscape

The following section is taken from this document: Positioning-To-Be Architecture: 503-100-C-Positioning-TO-BE-Architecture-V2 by Ashley Leonard

The Receivables and collection Process require the following services that are provided by application and group into logical business services.



These processes should support activities to record receivables in the system as they are recognized. To support this process, the system must provide automated functionality to do the following:

- Record receivables: Record accounts receivable and corresponding revenues, expense reductions, advance/prepayment reclassifications, or other offsets.
- Receivable adjustments: Record adjustments to receivables and capture a reason and description on each adjustment.
- Consolidating receivables: Consolidate multiple receivables for a customer onto one statement retaining identification of each receivable separately within the statement.
- Customer account statements: Generate Customer Account Statements. Parameters include customer type, customer ID number, customer name, and time period (month, quarter, year-to-date). Result is a statement for each customer that includes:
    1. Statement date
    2. Customer ID number
    3. Customer name
    4. Customer address
    5. Customer contact name

6. DC Name and Registration Number
7. Penalties/Administrative costs
8. Adjustments made

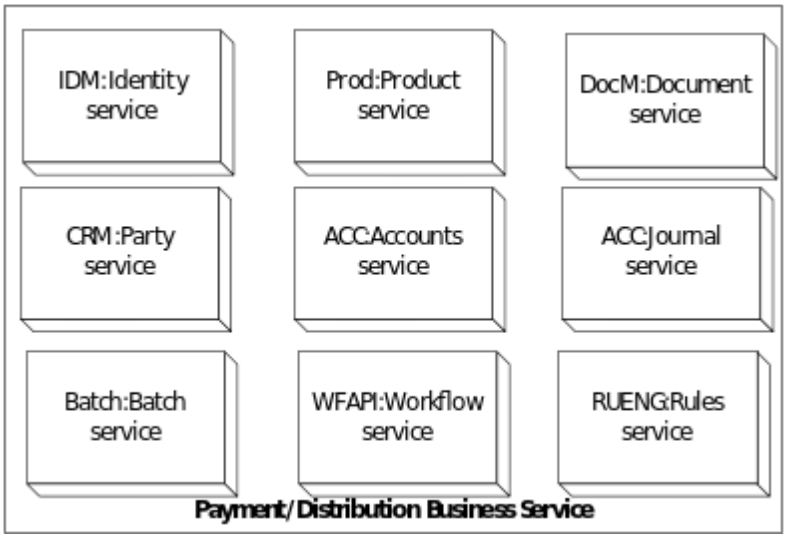
- Collections received (identify principal, fees/penalties, and administrative charges separately to indicate how collections were applied)

- Outstanding receivable balance: Provide agency the option to generate customer statements in Excel and PDF formats

- Outstanding receivable balance query: Query outstanding receivable balance. Result is the original amount of the receivable, the current outstanding amount of the receivable and a detailed list of all activity related to the receivable, including:

    1. Adjustments
    2. Fees
    3. Penalties
    4. Administrative charges
    5. Collections
    6. Waivers

The Payment/Distribution Process require the following services that are provided by application and group into logical business services.



The Payment Management function deals with all payables. The system architecture should support specific activities relating to payments by other external systems that provide payment data to the PDA system for control and management.

The Payment Management function consists of the following processes:

- Payee Information Maintenance
- Disbursing Processes

Payee Information Maintenance

The term “payee” is used here to include any entity to which disbursements may be made, for Credit Providers. In the system, payee information needed to make payments should be coordinated with information needed for other purposes and in other systems. To support the Payee Information Maintenance process, the system MUST provide automated functionality to do the following:

- Credit Provider (CP) information; System must capture the following CP information:
  1. CP number (agency-assigned)
  2. CP name (Legal)
  3. CP name (DBA)
  4. CP address
  5. Business type
  6. Organization type
  7. RSA or Non-RSA
  8. Comment field
  9. Default payment method
  10. Alternate payment methods
  11. Address indicator
  12. Banking information (including bank name, branch name, account number and account type)

- CP file query; Query CP file. Parameters include:
  1. CP number
  2. CP legal name
  3. CP DBA Name

- CP file history; maintain a history of changes made to CP information. Capture name of data item changed, before and after values, entry date and time and ID of user who made the change.

- CP history query; Query CP history. Parameters include CP number, change date range. Results include date and time of change, ID of user who made the change, item name, before and after data values.

Disbursing Processes

This process supports activities required to make distributions or payments to the Credit Providers and every other related fee. The system must provide the capability to prepare requests for distributions (payment schedules) and to create and transmit payment files in the formats required by PDA and financial institutions for the initiation of payments.

To support the disbursing process, the system must provide automated functionality to do the following:

- Prompt payment; calculate the due date of CP payments including but not limited to the following factors:
  1. Contract terms
  2. Invoice receipt
  3. Accelerated payment methods

- Override CP record payment terms on obligation; Capture payment terms on obligations that are different than those specified on the associated CP record.

- Validate payment terms: Validate system payment terms against the payment terms on the related obligating documents. Calculate the most advantageous terms and use them to calculate the payment due dates and amounts.

- Payment due date override; Capture an agency-specified payment due date in place of a system-calculated due date (i.e. payment due date override).

- System calendar: Define dates (e.g., weekends, Public holidays) for which payments cannot be scheduled. Prevent payment scheduling that falls on agency-excluded dates.

- Numbering payment schedules; Maintain a sequential numbering system for scheduling payments to be made by the disbursing office

- Do not disburse to negative cash position: Validate that plan selected for payment will not disburse a fund into a negative cash position. Notify the agency of plans that fail this edit.

- Manual payments; Select and process received payments for manual payment/distribution