**Test Script Overview**

This test script covers end-to-end validation for Biller Onboarding Management, Virtual Account Management (VAM), Fee Setup and Authorization, and Processing Virtual Account Payments. It is organized by user story and aligned to the acceptance criteria you shared.

* **Scope:** Activation/deactivation, maker–checker setup, collection account validation, fixed-amount rules, virtual account configuration and assignment, fee setup and approval, payment processing, name enquiry, reporting, and exports and APIs
* **Roles:** Subsidiary Bank Operations Initiator, Subsidiary Bank Operation Authorizer, Corporate Admin, Payer.
* **Environments:** Recommend Dev → SIT → UAT; test data and notifications should be fully functional in SIT/UAT.
* **Assumptions:** Email service configured; audit logs enabled; reporting and export services enabled; intrabank rails available for name enquiry and posting.

**Test Data and Setup**

* **Users and Roles:**
  + **Initiator:** bank\_ops\_initiator@example.com
  + **Authorizer:** bank\_authorizer@example.com
  + **Corporate Admin A (initiator):** corp\_admin\_a@example.com
  + **Corporate Admin B (approver):** corp\_admin\_b@example.com
* **Biller/Merchant Fixtures:**
  + **Biller A:** Maker–checker ON; Collection Account 1111111111
  + **Biller B:** Maker–checker OFF; Collection Account 2222222222
* **Virtual Account Types:**
  + **Static VA:** no expiry
  + **Dynamic VA:** default duration 7 days (override as needed)
* **Channels to Validate:**
  + **Mobile Banking, Internet Banking, POS, Corporate Internet Banking (CIB)** — intrabank scope for name enquiry.
* **Email Sink for Tests:**
  + Use a test mailbox or catch‑all to verify notifications.

**Test Cases – Biller Onboarding Management (3.1.1)**

| **ID** | **Preconditions** | **Steps** | **Expected Result** |
| --- | --- | --- | --- |
| TC-3.1.1-01 Activate service (single biller) | Biller A exists; feature accessible to Initiator | 1) Login as Initiator; 2) Open Biller A; 3) Click Activate Virtual Account Service; 4) Save/Submit | System marks Biller A as Activated; biller gains access to VAS features immediately or per workflow; status visible in UI/audit. |
| TC-3.1.1-02 Deactivate requires approval | Maker–checker enabled for bank; Authorizer available | 1) Initiator selects Deactivate for Biller A; 2) Submit; 3) Login as Authorizer; 4) Approve | Deactivation remains pending until approval; after approval, Biller A loses access to VAS features; audit shows Initiator/Authorizer actions. |
| TC-3.1.1-03 Access blocked when deactivated | Biller A is Deactivated | 1) Attempt to access any VAS feature as Biller A; 2) Attempt VA assignment | Access denied; clear message that service is deactivated; no VA operations allowed. |
| TC-3.1.1-04 Bulk activate/deactivate | Multiple billers exist | 1) Select multiple billers; 2) Apply Activate; 3) Verify; 4) Apply Deactivate (with approval if required) | Bulk changes applied; maker–checker enforced where applicable; statuses updated consistently. |
| TC-3.1.1-05 Configure maker–checker ON | Biller A exists | 1) Initiator toggles maker–checker ON for allocation/deallocation; 2) Save | Requests for allocation/deallocation require approval; UI indicates maker–checker status. |
| TC-3.1.1-06 Configure maker–checker OFF | Biller B exists | 1) Initiator toggles maker–checker OFF; 2) Save | Initiator’s allocation/deallocation completes immediately; no approvals generated. |
| TC-3.1.1-07 Set collection account and validate | Valid core banking connectivity | 1) Enter Account Number; 2) Trigger validation | System populates Account Name upon successful validation; prevents save if invalid. |
| TC-3.1.1-08 Configure fixed amount | Biller A; Fixed Amount intended (e.g., 250.00) | 1) Mark “Fixed Amount” as Yes; 2) Enter 250.00; 3) Save | System stores Fixed Amount; to be enforced during payment validation. |

**Test Cases – Virtual Account Management (3.1.2)**

**Configure virtual account parameters (3.1.2.1)**

| **ID** | **Preconditions** | **Steps** | **Expected Result** |
| --- | --- | --- | --- |
| TC-3.1.2.1-01 Dynamic VA expiry by duration | Bank user access to VAM | 1) Set max duration to 7 days; 2) Create dynamic VA; 3) Note creation date | Expiry date = creation date + 7 days; VA auto-expires at start/end of designated expiry day per system rule. |
| TC-3.1.2.1-02 Auto-expire after use | Dynamic VA active | 1) Perform first successful payment; 2) Check VA status | VA expires immediately after use (if rule is “or immediately after used”); further payments rejected due to expiry. |

**Assign/generate virtual accounts (3.1.2.2)**

| **ID** | **Preconditions** | **Steps** | **Expected Result** |
| --- | --- | --- | --- |
| TC-3.1.2.2-01 Assign static VA | Biller active; Maker–checker OFF | 1) Corporate Admin enters payer details (Name, Email, Phone); 2) Select Static; 3) Submit | VA allocated instantly; email sent to payer with Account Number and Account Name; no Expiry date shown. |
| TC-3.1.2.2-02 Assign dynamic VA with expiry | Biller active; duration configured | 1) Enter payer details; 2) Select Dynamic; 3) Submit | VA allocated; expiry date assigned; email includes Account Number, Account Name, Expiry Date. |
| TC-3.1.2.2-03 Maker–checker ON: approval flow | Maker–checker ON; Admin A initiates; Admin B exists | 1) Admin A submits VA allocation; 2) Verify request not auto-executed; 3) Admin B receives email; 4) Admin B approves | Initiator cannot self-approve; approval notification sent; upon approval, allocation executes and payer email dispatched. |
| TC-3.1.2.2-04 Maker–checker ON: decline with reason | Same as above | 1) Admin A initiates; 2) Admin B declines; 3) Enter reason | Request declined; reason captured and viewable in audit/details; no VA allocated; initiator notified. |
| TC-3.1.2.2-05 Maker–checker OFF: no authorization | Maker–checker OFF | 1) Admin A allocates VA | Allocation executes immediately; no authorization tasks or emails to approvers. |
| TC-3.1.2.2-06 Batch VA creation and emails | CSV/template prepared with multiple payers | 1) Upload batch; 2) Submit; 3) Monitor processing | Each recipient gets email with VA details; all VAs created; partial failures logged with reasons; overall status visible. |
| TC-3.1.2.2-07 Allocation/deallocation approvals by Corporate Admin | Maker–checker ON | 1) Submit deallocation; 2) Approve/Decline with reason | System allows approve/decline; executes on approval; captures decline reasons. |
| TC-3.1.2.2-08 VA allocation report and export | Reporting module active | 1) Open VA report; 2) Verify columns; 3) Export to Excel, CSV, PDF | Report shows VA No, VA Name, Type, Status, Date Created, Email, Phone, Biller/Merchant; exports succeed and match on-screen data. |

**Test Cases – Fee Setup and Authorization (3.1.2.3, 3.1.2.4)**

| **ID** | **Preconditions** | **Steps** | **Expected Result** |
| --- | --- | --- | --- |
| TC-3.1.2.3-01 Flat fee setup | Initiator access | 1) Choose Flat; 2) Enter fee amount (e.g., 5.00); 3) Save | Flat fee recorded; pending approval if required. |
| TC-3.1.2.3-02 Percentage fee with min/max | Initiator access | 1) Choose Percentage; 2) Enter Rate (e.g., 1.5%), Min (0.50), Max (25.00); 3) Save | Percentage fee recorded with boundaries; pending approval if required. |
| TC-3.1.2.3-03 Fee frequency at source | Fee configured | 1) Select “At source (immediately)”; 2) Save; 3) Post a payment | Fee debited immediately per transaction; correct amount per flat/percentage and min/max. |
| TC-3.1.2.3-04 Periodic fee monthly/weekly | Fee configured | 1) Select Periodic; 2) Choose Monthly/Weekly; 3) Set effective day/date; 4) Select Multiple vs Single debit; 5) Save | System schedules fee per chosen cadence; on effective day, applies single or aggregated multiple debit as configured. |
| TC-3.1.2.3-05 Concessionary fee overrides standard | Standard fee exists | 1) Set concessionary fee for Biller A; 2) Save | Concessionary fee applies to Biller A’s transactions, overriding standard fee. |
| TC-3.1.2.3-06 Concessionary fee shared | Multiple merchants | 1) Assign same concessionary fee to Merchant X and Y | Both merchants use the same concessionary configuration without conflict. |
| TC-3.1.2.3-07 Zero fee when unset | No fee set | 1) Process a payment | System posts zero fee; no unexpected charges. |
| TC-3.1.2.4-01 Authorizer approves | Pending fee setup | 1) Login as Authorizer; 2) Approve | Fee setup executed; active status reflected; audit logged. |
| TC-3.1.2.4-02 Authorizer declines with reason | Pending fee setup | 1) Login as Authorizer; 2) Decline; 3) Enter reason | Request declined; reason captured; initiator notified; no changes applied. |

**Test Cases – Processing Virtual Account Payments (3.1.3)**

| **ID** | **Preconditions** | **Steps** | **Expected Result** |
| --- | --- | --- | --- |
| TC-3.1.3-01 Name enquiry flow and display | VA exists; intrabank channels available | 1) On channel, enter VA number; 2) Trigger name enquiry | System routes to VAM; returns and displays correct Account Name on channel; intrabank requests supported. |
| TC-3.1.3-02 Fixed amount validation fail | Fixed amount set (e.g., 250.00) | 1) Enter amount ≠ fixed (e.g., 200.00); 2) Submit | Transaction fails with clear validation message; no debit/credit posted. |
| TC-3.1.3-03 Fixed amount validation pass and credit | Fixed amount set (250.00) | 1) Enter 250.00; 2) Submit | Validation passes; biller’s collection account credited; payer sees success confirmation. |
| TC-3.1.3-04 Dynamic VA after use | Dynamic VA active | 1) Make successful payment; 2) Attempt second payment | First payment succeeds; VA expires immediately; second attempt rejected due to expiry. |
| TC-3.1.3-05 Transaction reports and search | Reporting enabled | 1) Open transaction report; 2) Search by Amount, VA No, Date; 3) Export to Excel/CSV/PDF | Correct results returned per criteria; exports succeed and match report data. |
| TC-3.1.3-06 Multi-channel coverage | Channels configured | 1) Repeat TC-3.1.3-01/03 across Mobile, Internet, POS, CIB | Consistent behavior across channels for name enquiry, validation, and posting. |

**Test Cases – Virtual Account Generation Pool (3.1.4.1)**

| **ID** | **Preconditions** | **Steps** | **Expected Result** |
| --- | --- | --- | --- |
| TC-3.1.4.1-01 Auto-generate to pool | Minimum stock set to 10,000; current pool 9,500 | 1) Start generator job; 2) Inspect pool count | System generates 500 VAs (shortfall) and securely stores them as Unallocated. |
| TC-3.1.4.1-02 Numbering rule prefix | Recommended prefix set (e.g., 7) | 1) Generate VAs; 2) Sample 100 numbers | All sampled VA numbers start with configured prefix; format/length comply with rules; numbers are unique. |
| TC-3.1.4.1-03 Banking interoperability | Fresh unallocated VA manually assigned to a test biller | 1) Assign VA; 2) Initiate transfer from another bank/channel | VA accepts transfers like a regular account on any bank’s channel; funds post successfully. |
| TC-3.1.4.1-04 Intra-bank interoperability | Intrabank rails operational | 1) Perform intrabank name enquiry and transfer to the VA | Name enquiry returns correct name; transfer succeeds over intrabank infrastructure. |
| TC-3.1.4.1-05 Continuous stock monitoring | Generator schedule active | 1) Reduce pool below threshold by allocating; 2) Wait next schedule | Background job detects deficit and tops up to minimum automatically. |
| TC-3.1.4.1-06 Configurable minimum stock | Admin access to backend | 1) Change min stock to 15,000; 2) Trigger job | System generates shortfall to reach 15,000; configuration persists across restarts. |
| TC-3.1.4.1-07 API-based generation | Third‑party client credentials valid | 1) Call generation endpoint per spec; 2) Inspect pool | System accepts API request to generate VAs; new VAs added to Unallocated pool. |
| TC-3.1.4.1-08 Secure storage and audit | Logging enabled | 1) Generate VAs; 2) Review logs/audit | No full VA numbers or sensitive data in plaintext logs; audit records actor/job, volume, timestamps. |

**Test Cases – Deallocation and Release to Pool (3.1.4.2)**

| **ID** | **Preconditions** | **Steps** | **Expected Result** |
| --- | --- | --- | --- |
| TC-3.1.4.2-01 Manual deallocation to pool | Allocated VA exists | 1) Submit deallocation request; 2) Confirm | VA status changes to Unallocated; removed from payer; cannot be used for transfers until reallocated. |
| TC-3.1.4.2-02 Auto-release on dynamic expiry | Dynamic VA past expiry | 1) Wait until expiry; 2) Check status | System auto-deallocates on expiry and returns VA to Unallocated pool. |
| TC-3.1.4.2-03 Auto-release after first use | Dynamic VA with “expire after use” rule | 1) Make successful payment; 2) Check status | System deallocates immediately after first successful transfer; VA not usable until reallocated. |
| TC-3.1.4.2-04 Prevent transfers while unallocated | VA is Unallocated | 1) Attempt transfer | Transfer rejected; clear message that VA is not allocated/active. |
| TC-3.1.4.2-05 Reallocate previously released VA | Unallocated VA in pool | 1) Allocate to a new payer; 2) Attempt transfer | Allocation succeeds; transfers now permitted; new payer details in KYC/ledger. |
| TC-3.1.4.2-06 Audit trail for deallocation | Audit enabled | 1) Manual and auto deallocate; 2) Review audit | Records include reason (expiry/use/manual), actor/job, timestamps, previous allocation context. |

**Test Cases – Bank Management for Corporate Admins (3.1.5.1)**

| **ID** | **Preconditions** | **Steps** | **Expected Result** |
| --- | --- | --- | --- |
| TC-3.1.5.1-01 Create minimum two Corporate Admins | Biller MC-ON | 1) Bank Admin creates Corp Admin A and B; 2) Submit | System allows creation of at least two Corporate Admins for biller with maker–checker ON. |
| TC-3.1.5.1-02 Maker–checker for user management | Biller MC-ON; Admin A and B exist | 1) Admin A creates a new user or edits a user; 2) Admin B approves | Requests go for authorization by another Corporate Admin; initiator cannot self-approve; executes after approval. |
| TC-3.1.5.1-03 Decline with reason | Same as above | 1) Admin A submits change; 2) Admin B declines; 3) Provide reason | Request declined; reason captured; no changes applied; Admin A notified. |
| TC-3.1.5.1-04 Pending approvals notification on login | Pending requests exist | 1) Login as Corporate Admin B | Dashboard shows notification of pending approval requests immediately upon login. |
| TC-3.1.5.1-05 Maker–checker OFF behavior | Biller MC-OFF | 1) Bank Admin creates a Corporate Admin; 2) Edit user | Creation and user management complete without requiring another Corporate Admin’s approval. |

**Test Cases – Third‑Party APIs (3.1.6)**

**Virtual Account Allocation API (3.1.6.1)**

| **ID** | **Preconditions** | **Steps** | **Expected Result** |
| --- | --- | --- | --- |
| TC-3.1.6.1-01 Allocate VA via API | Third‑party client authorized; pool has stock | 1) POST allocate with payer details and biller ID | API generates and allocates a VA; response returns VA number, name, type, expiry (if dynamic). |
| TC-3.1.6.1-02 Dynamic vs static via API | Duration configured | 1) Request dynamic; 2) Request static | Dynamic returns expiry date; static returns no expiry; both usable for payments. |
| TC-3.1.6.1-03 Maker–checker concordance | Biller MC-ON | 1) Call allocate for MC-ON biller | Request recorded as pending; requires Corporate Admin approval before allocation becomes active; API response indicates pending status. |
| TC-3.1.6.1-04 Validation and errors | Missing email or phone | 1) Submit invalid payload | API returns 4xx with clear validation errors; no allocation occurs. |
| TC-3.1.6.1-05 Idempotency | Idempotency key supported | 1) Retry same request with same key | Only one VA allocated; retries return same allocation reference. |

**Virtual Account Deallocation API (3.1.6.2)**

| **ID** | **Preconditions** | **Steps** | **Expected Result** |
| --- | --- | --- | --- |
| TC-3.1.6.2-01 Deallocate via API | Allocated VA exists | 1) POST deallocate with VA number | API deallocates and returns VA to pool; further transfers rejected until reallocation. |
| TC-3.1.6.2-02 Nonexistent or unallocated VA | VA not allocated | 1) Call deallocate | API returns appropriate 4xx error; no state change. |
| TC-3.1.6.2-03 Maker–checker concordance | Biller MC-ON | 1) Deallocate via API | Request requires Corporate Admin approval before taking effect; API shows pending status. |

**Payment Confirmation Status API (3.1.6.3)**

| **ID** | **Preconditions** | **Steps** | **Expected Result** |
| --- | --- | --- | --- |
| TC-3.1.6.3-01 Confirm successful payment | Completed transaction exists | 1) GET status with VA and reference | API returns status=SUCCESS with amount, currency, timestamp, and reference. |
| TC-3.1.6.3-02 Confirm pending or failed | Pending/failed transaction exists | 1) GET status | API returns status=PENDING or FAILED with reason codes where applicable. |
| TC-3.1.6.3-03 Unknown reference | Random reference | 1) GET status | API returns NOT\_FOUND or equivalent; no sensitive leakage. |