Simplifying
ATM Reconciliation

FSS
POWERING
PAYMENTS

ATM Overview

ATMs are a critical customer self-service touchpoint for a range of transactions – cash dispensation, fund transfer between accounts, mobile recharge, bill payments and more. Customers can perform transactions using a credit or a debit instrument – linked to their checking accounts - at an ATM terminal that may or may not be owned by the same bank.

At the backend, ATM transactions are routed through multiple systems **(View Section Transaction Sets)**. Each entity in the value chain maintains transaction records that need to be aggregated, validated and matched. An interrelated set of factors makes the task of reconciling records complex. This includes:
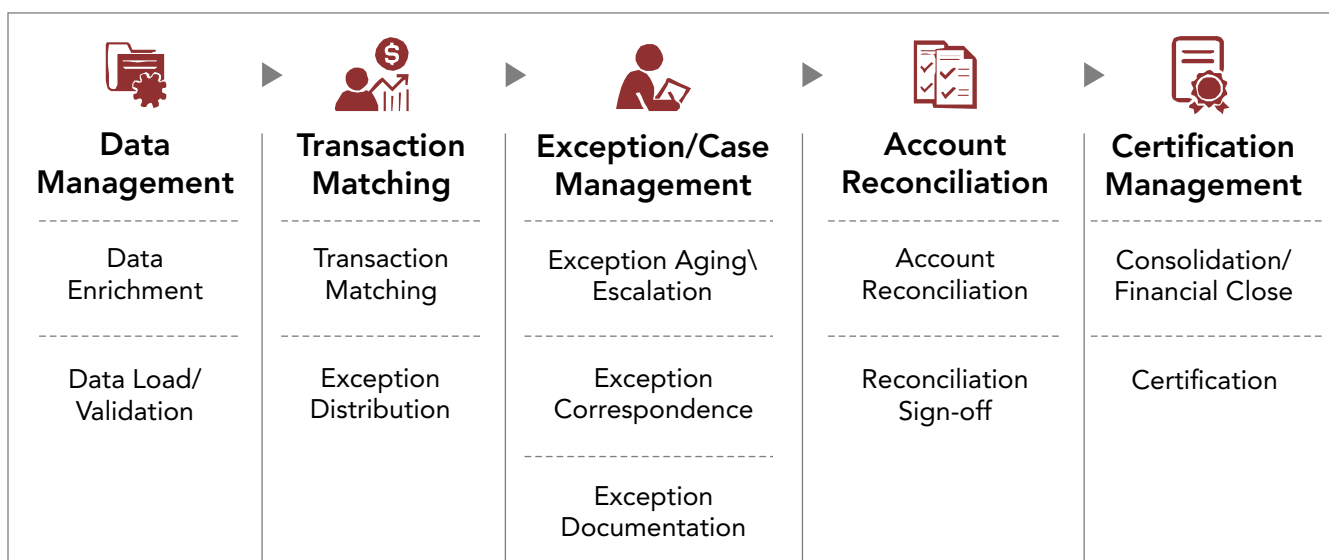
- Size of the ATM terminal fleet maintained by banks and the sheer volume of transaction records

- Proprietary file formats maintained with by each Interchange and Core Banking System

- Multiple OEMs maintaining their own electronic journals format combined with the unstructured nature of the data in Electronic Journal files

- Variations in accounting structures and policies maintained by banks

Reconciliation Lifecycle Management

The reconciliation process begins with collation of data from multiple sources, namely the Cash Replenishment Agency, ATM General Ledger balances in Core Banking System, Interchange Switch and the Core Banking System. The information records maintained by each system are harmonized and matched for accurate data related to cash positions at every ATM terminal.

Reconciliation Life Cycle

Data Management	Transaction Matching	Exception/Case Management	Account Reconciliation	Certification Management
Data Enrichment	Transaction Matching	Exception Aging\Escalation	Account Reconciliation	Consolidation/ Financial Close
Data Load/ Validation	Exception Distribution	Exception Correspondence	Reconciliation Sign-off	Certification
		Exception Documentation		

Workflow Configuration Management | Rich Dashboards | Performance Management

• Load
• Transform
• Validate
• Export
• Purge
	• Matching
	  ◦ Auto, proposed, manual
	  ◦ 1-1, 1-n, n-n
	• Exception identification
	• Reporting
		• Root cause identification
		• Push-based escalation
		• Automated correspondence
		• Automated notification
		• Automated corrections
			• Proof calculations
			• Point-in time reconciliation reporting
			• Summary and detail -level reporting
			• Historical storage of reconciliation snapshots
				• Attach supporting documentation
				• Add reconciling items
				• Review, approve, delegate
				• Automated notification
				• Digital signoff

Essentially the reconciliation process:

- Tallies Cash in the ATM – The process matches the derived terminal balance recorded in the Core Banking System with the physical balance reported by the Cash Replenishment Agency, the transactions recorded in the respective terminal's General Ledger and total transactions. Basis predefined match rules, the Reconciliation process identifies discrepancies, between records, which means excess or deficit cash at the ATM terminal than recorded requiring further verification.

- Reconciles Transactions – Harmonizes ATM transactions recorded by multiple systems in the transaction chain. These can be categorized as on-us and off-us transactions.

On-Us Transactions

Customers perform transactions at the ATM network operated by their bank.
In this scenario, a three-way reconciliation is performed by matching records from the following systems:

- Switch
- Core Banking System
- Electronic Journal

Off-Us Transactions

Customers belonging to the bank may transact at an ATM managed by another bank. In this scenario, a four-way reconciliation is performed by aggregating transaction records from the following systems:

- Electronic Journal
- Switch
- Core Banking System
- Interchange

The process aids in identification of reconciled and unreconciled records, enabling back office teams to analyze and address exceptions and achieve financial close. A list of exceptions include:

- Transaction records in the Switch or the Core Banking System (General Ledger) not available in the ATM
- Electronic Journal should come after ATM
- Transactions recorded by the ATM not available at the Switch or the Core Banking System
- Transactions declined at the ATM (Electronic Journal)
- Transaction reversals at the Switch
- Transactions paid by the Interchange but declined by the Switch or the ATM Electronic Journal
- Transactions recorded as successful at the Switch or the ATM not paid by the Interchange
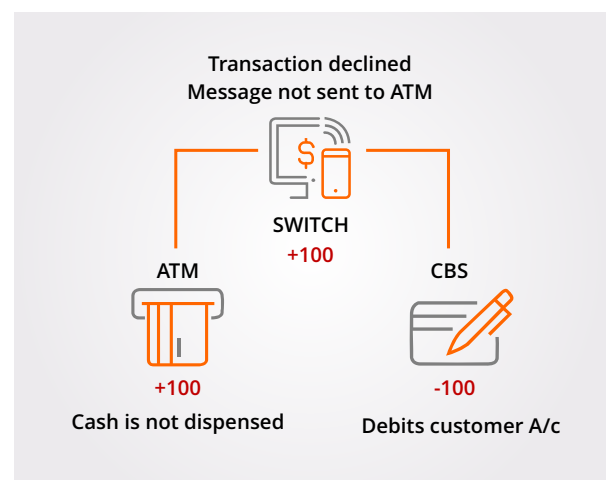
Exceptions - Cash Excess

An excess in cash essentially means the customer account has been debited but monies have not been dispensed. This could result in potential customer complaints and disputes. A streamlined ATM reconciliation process highlights mismatched records, improves transaction traceability and customer satisfaction via quick resolution of disputes.
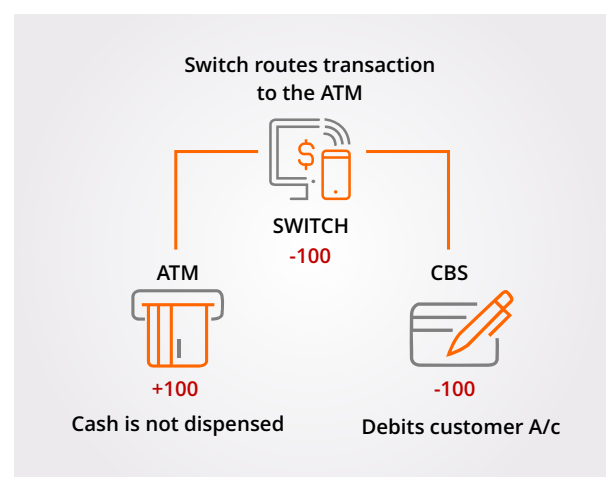
Scenario 1

The customer initiates a transaction request and the Core Banking System debits the customer's account. The transaction is, however, reversed at the Switch. The reconciliation process would highlight the discrepancy, enabling the bank to reverse the transaction entry in the General Ledger and credit the customer's account.

Transaction declined
Message not sent to ATM

SWITCH
+100

ATM

CBS

+100
Cash is not dispensed

-100
Debits customer A/c

Scenario 2

The customer initiates a transaction and the Core Banking System debits the customer's account. The transactions are however declined by the ATM due to a communication error or a cash deficit in the ATM, a transaction timeout or a hardware related fault. The reconciliation process would highlight the overage, enabling the bank to reverse the transaction entry in the General Ledger and credit the customer's account. Essentially, this means the customer

Switch routes transaction
to the ATM

SWITCH
-100

ATM

CBS

+100
Cash is not dispensed

-100
Debits customer A/c

account has been debited but monies have not been dispensed. This could potentially result in customer complaints and disputes. The ATM reconciliation process proactively flags such scenarios, enabling quick resolution, prior to customers logging a complaint.

Scenario 3

The ATM dispenses a part of the monies debited by the Core Banking System, resulting in a discrepancy. The partial dispensation of cash by the ATM results in unmatched records, creating an excess in the system. The Reconciliation process enables banks to pinpoint and pro-actively address the variance.
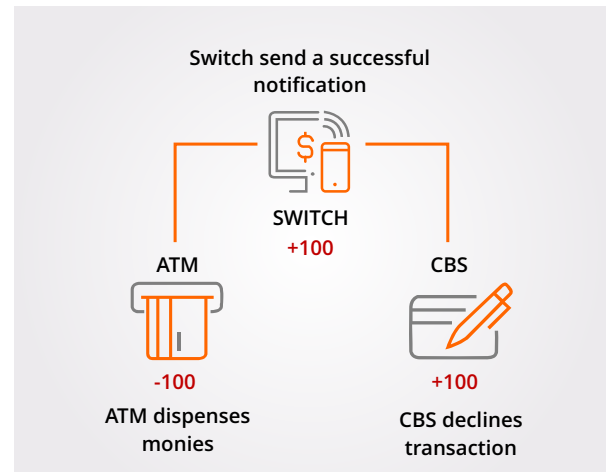

Switch routes message to ATM

SWITCH
-100

ATM

CBS

-50

-100

ATM dispenses part of monies

Debits customer A/c
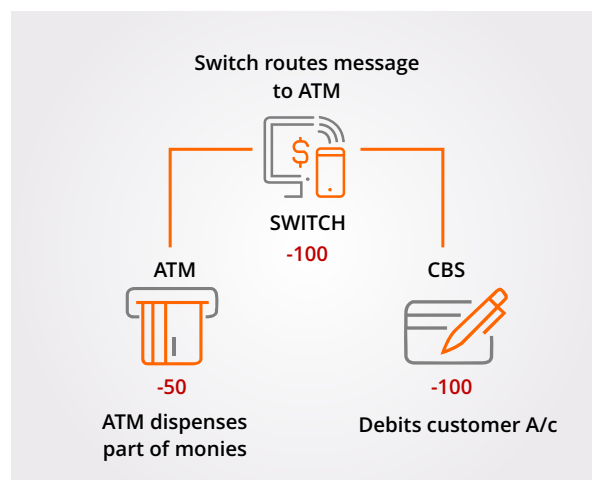
Exceptions - Cash Deficit

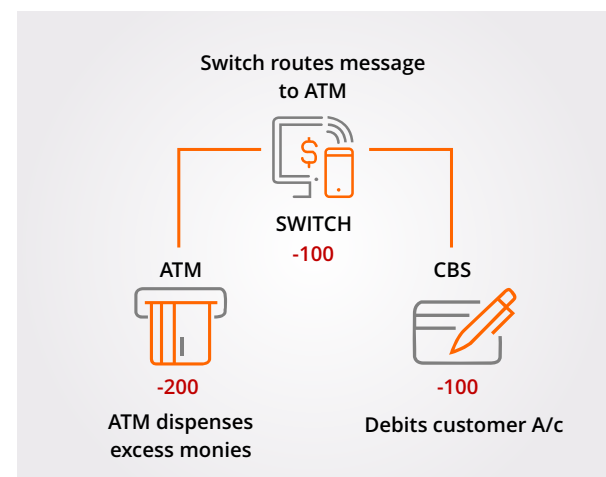A set of factors could create in a cash deficit in the system.

Scenario 1

Discrepancies in transaction records could arise due to a business or a technical decline by the Core Banking System. For example, a transaction reversed at the Core Banking System, is recorded as a successful transaction by the ATM. As a corrective measure, the customer account is debited. In event of insufficient funds in the customer account, the bank needs to recover the monies.

Switch send a successful notification

SWITCH
+100

ATM   **CBS**

-100   **+100**
ATM dispenses   **CBS declines**
monies   **transaction**

Scenario 2

The ATM could dispense an amount higher than the monies requested by the customer, due to incorrect cash denominations loaded in the ATM hopper. This results in a mismatch in transaction records maintained by the Core Banking System, the Switch and the physical balances in the ATM.

Switch routes message to ATM

SWITCH
-100

ATM   **CBS**

-200   **-100**
ATM dispenses   **Debits customer A/c**
**excess monies**

Off-Us Transactions

Exceptions could arise for off-us transactions. The Reconciliation process identifies discrepancy in accounting records for off-us transactions.

Scenario 1

Bank B's customer transacts at Bank A's ATM network. The issuer bank's Core Banking System debits the customer account. The transaction is declined at the Acquirer Switch and the customer does not receive monies. A credit adjustment is made to the customer account.
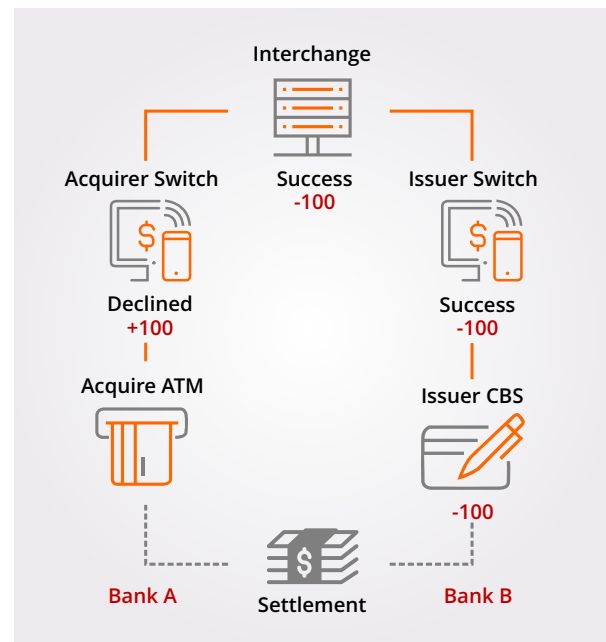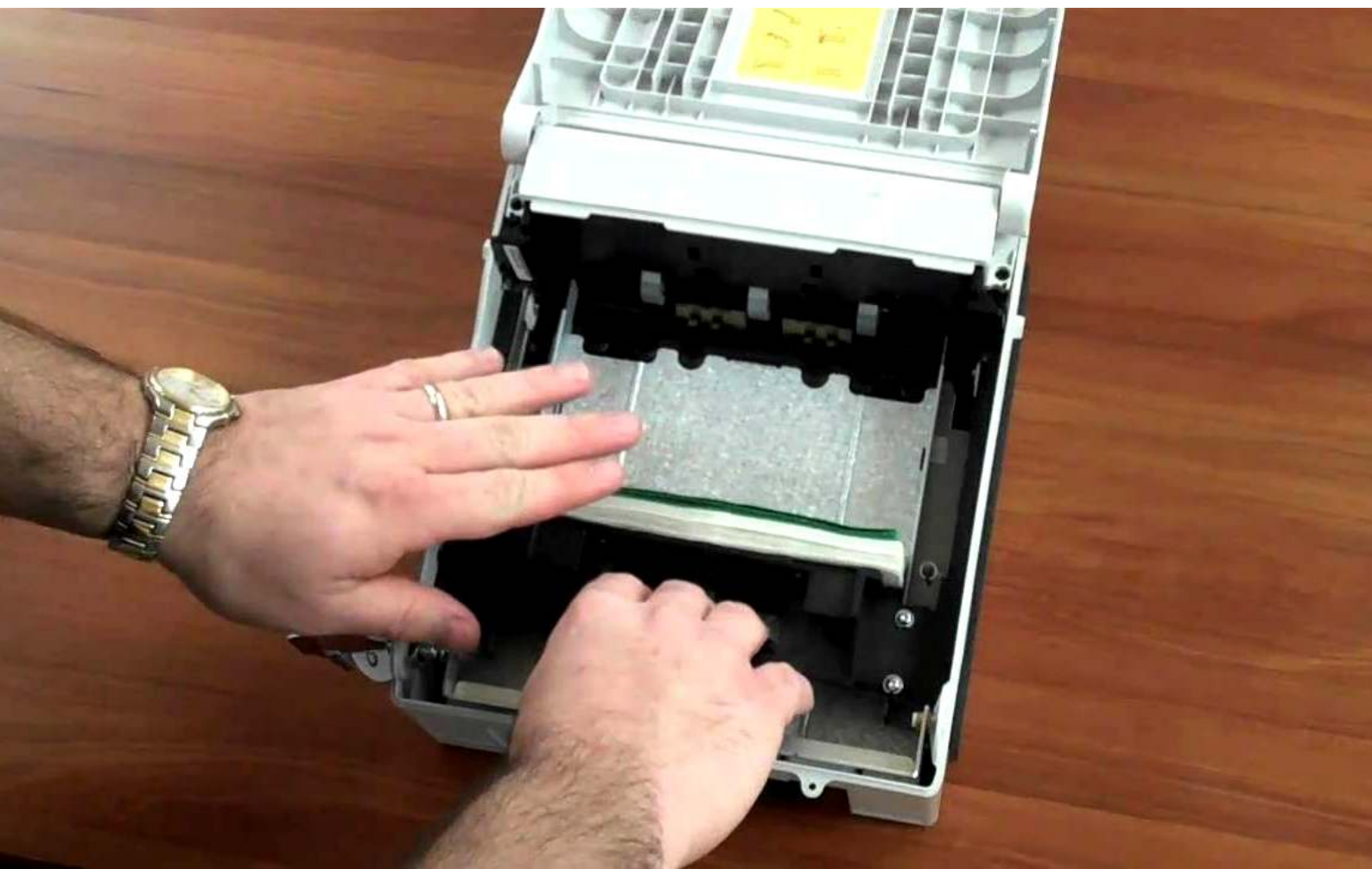

Scenario 2

Bank B customer transacts at Bank A's ATM. The issuer bank's Core Banking System debits the account. The transaction is successful at the Acquirer Switch and the ATM. However, the same is not settled by the Interchange. The acquirer may settle the funds with the issuer by raising a debit adjustment.
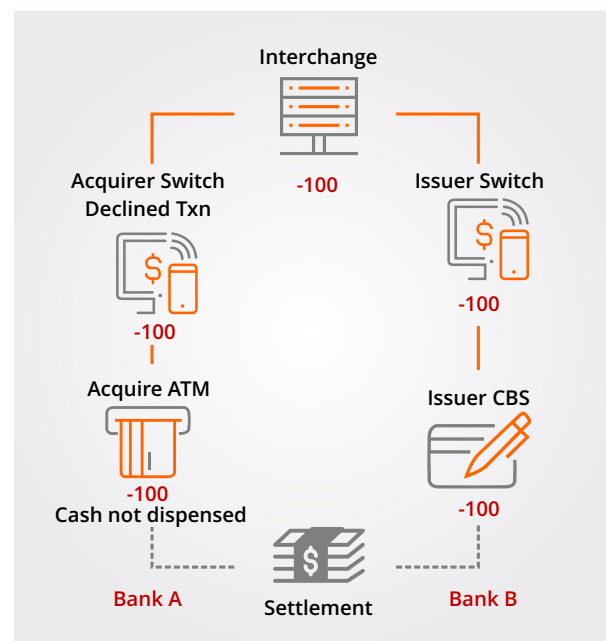
Cash Load Tally

The cash reserves available in the ATM need to be accurately recorded by all systems involved in the transaction. Exceptions could, however, arise due to loading and unloading of cash on a specific day. The Reconciliation process highlights unmatched entries and the differential amount.
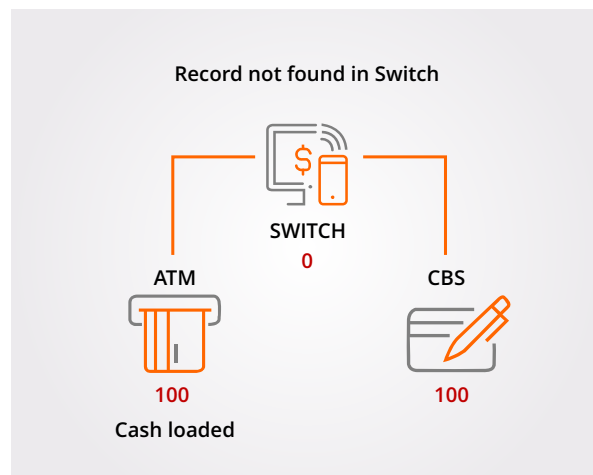
Scenario 1

The Cash Replenishment, Agency loaded less or wrong cash in the ATM hopper, resulting in a cash outage at the ATM and a mismatch in transaction records maintained across systems.

Scenario 2

The Switch did not update its records post-cash upload at the ATM.

Record not found in Switch

SWITCH
0
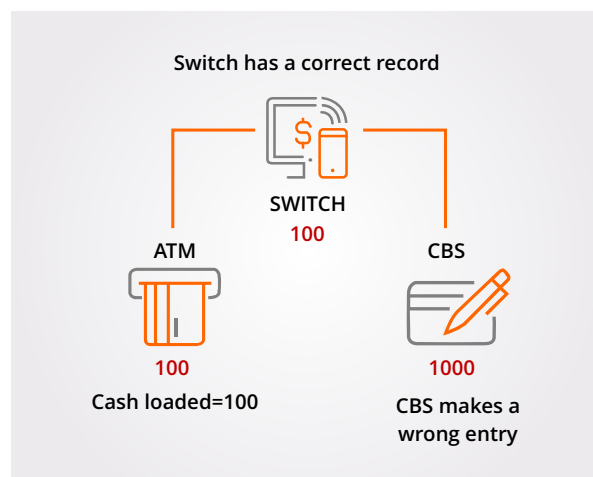
ATM
100
Cash loaded

CBS
100

Scenario 3

The cash was loaded in the ATM, but the Core Banking System did not post the entry in the General Ledger account.
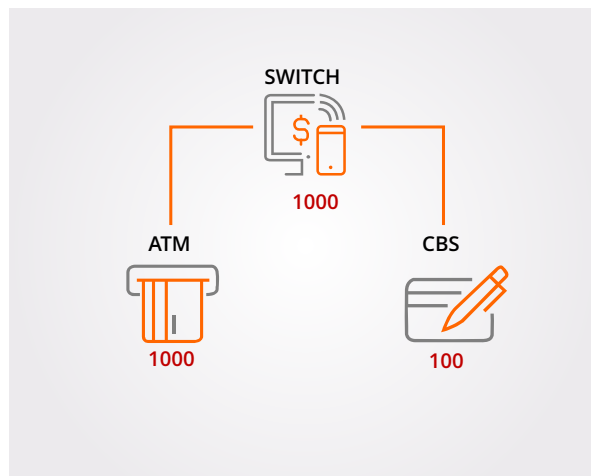
Scenario 4

The Core Banking System records an amount in the General Ledger account higher than loaded in the ATM terminal. The Cash Replenishment Agency reports a shortfall and the mismatch needs to be reversed.

Switch has a correct record

SWITCH
100

ATM
100
Cash loaded=100

CBS
1000
CBS makes a wrong entry

Scenario 5

The Core Banking System records a lower amount than loaded at the ATM terminal. The Cash Replenishment Agency would report an additional amount and the mismatch is addressed by crediting the General Ledger records.

Cash Balance Tally

The differences could arise on account of:

- wrong accounting

- possible man-in-the middle fraud

- excess on account of declined transactions

- cash shortage due to suspect transactions.

Scenario 1

The reconciliation process identifies suspect transactions and helps recovery either through suitable debit or credit adjustments. For cases where there are no suspect transactions and physical shortages are identified, the branch or the vendor account is debited and the General Ledger Account is credited.

Scenario 2

The reconciliation process identifies declined transactions resulting in excess cash. These can be addressed through pro-active credits adjustments or settled against disputes.

FSS ATM Reconciliation – Key Capabilities

FSS Smart Recon is a highly configurable solution that federates and normalizes data from Electronic Journal files, Switch, Interchange and the Core Banking System to facilitate automatic matching, analysis and transaction remediation. Built-in configurable workflows support force-matching within a controlled and fully audited framework. The key components include:

- **ETL Engine Process:** Extracts, loads and transforms data from any EJ file format including Diebold NCR,and Wincor

- **Support for reconciliation of multi-currency transactions**

- **Dynamic rule-setting based on reconciliation criterion:** Perform one-to-one transaction, suspect transactions versus corresponding overages as well as shortages and complaints

- **Force-match:** Automatically generates ATM reconciliation and knock-off entries.

- **Auto-Voucher Generation:** Handles reversal for partial withdrawals and currency fluctuation for cross-border transactions. The system supports automatic generation of adjustment entries for exception records across branches, or cash replenishment agencies, ATMs and customers

- **Rich Dashboards:** Customizable dashboards provide insights into exception transactions, tallied and untallied ATM terminals and cash variances at the terminal level

About FSS

FSS (Financial Software and Systems) is a leader in payments technology and transaction processing. FSS offers an integrated portfolio of software products, hosted payment services and software solutions built over 28+ years of experience. FSS, end-to-end payments products suite, powers retail delivery channels including ATM, POS, Internet and Mobile as well as critical back-end functions including cards management, reconciliation, settlement, merchant management and device monitoring. Headquartered in India, FSS services leading global banks, financial institutions, processors, central regulators and governments across North America, UK/Europe, Middle East, Africa and APAC.

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