

PAYMENTS SIGNAL REFERENCE ARCHITECTURE

SYNTHETIC / TRAINING ONLY

Accounting, ledger posting, settlement evidence, and reconciliation data lineage

Follow one payment from business state to balanced entries, external settlement evidence, customer reporting, and a closed reconciliation break.

Version: Payments Signal reference architecture v1

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REFERENCE POSTURE

This blueprint separates business state, accounting intent, product books, settlement books, external evidence, and reconciliation because those distinctions prevent unsafe retries. Real institutions may use several sub-ledgers, general ledgers, nostro platforms, data warehouses, and finance controls; legal posting rules and correction authority vary.

COMPONENTS

01 Payment state and accounting trigger [service]

Owner: Payment engine and product owner

Turns an authorised business-state transition into one immutable accounting intent.

02 Accounting rule and event classifier [application]

Owner: Finance architecture and product accounting

Selects the balanced debit and credit pattern for product, event, currency, fee, and settlement context.

03 Idempotent posting service [service]

Owner: Core ledger engineering

Creates a balanced journal atomically and returns a durable posting reference.

04 Customer and product ledger [ledger]

Owner: Core banking and finance

Records the institution's customer liability, receivable, fee, and product-position entries.

05 Nostro, settlement, and position books [ledger]

Owner: Treasury and finance

Records expected and confirmed movement in the external settlement asset.

06 External statement and settlement evidence [data-store]

Owner: Payments operations and treasury

Preserves network status, settlement confirmations, and account reports without treating a transport acknowledgement as settlement.

07 Reconciliation and break engine [control]

Owner: Finance and payments operations

Matches business events, journals, network evidence, settlement books, and statements at the same grain.

08 Break case, reporting, and close control [operations]

Owner: Reconciliation operations and finance control

Coordinates investigation, correction, attestation, and customer or regulatory reporting.

INTERFACES

01 Accounting intent

acct-payment-state -> acct-rule-engine | event | asynchronous

02 Balanced posting command

acct-rule-engine -> acct-posting-service | posting | synchronous

03 Product journal
 acct-posting-service -> acct-product-ledger | posting | synchronous

04 Settlement journal
 acct-posting-service -> acct-settlement-books | posting | synchronous

05 Settlement confirmation
 acct-external-evidence -> acct-settlement-books | message | asynchronous

06 Internal book extract
 acct-product-ledger -> acct-reconciliation | file | batch

07 Settlement-book extract
 acct-settlement-books -> acct-reconciliation | file | batch

08 External evidence feed
 acct-external-evidence -> acct-reconciliation | message | asynchronous

09 Reconciliation break
 acct-reconciliation -> acct-case-reporting | operator | operator

TRACES AND STRESS CASES

TRACE: Payment to balanced books

1. Authorise the accounting event - Business state confirmed
2. Select the journal rule - Balanced template selected
3. Post once - Journal committed
4. Update product books - Customer and product books updated
5. Receive settlement evidence - External outcome evidenced
6. Match every layer - Reconciled
7. Close with evidence - Control closed

STRESS: Duplicate accounting trigger

Settlement: External settlement is unchanged.

Funds: The first balanced journal remains authoritative.

Owner: Core ledger engineering

Safe action: Query the posting result by business key; do not issue a second journal.

STRESS: Ledger response is uncertain

Settlement: External settlement may not yet have occurred.

Funds: A journal may already exist.

Owner: Core ledger operations

Safe action: Look up the immutable business key before deciding whether any replay is safe.

STRESS: Statement does not match the settlement book

Settlement: The statement is evidence that cash moved on the external account.

Funds: Internal settlement books remain incomplete.

Owner: Treasury reconciliation

Safe action: Open a break; do not manufacture an expectation or reverse customer books without investigation.