PAYMENTS SIGNAL REFERENCE ARCHITECTURE
SYNTHETIC / TRAINING ONLY

Open-banking consent, authentication, API, payment-initiation, callback, and status architecture

Follow a customer from merchant intent through consent and bank authentication to payment initiation, asynchronous status, and merchant reconciliation.

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REFERENCE POSTURE

This blueprint uses a common PISP, account-provider, customer, and merchant pattern. It does not prescribe a jurisdiction’s authorisation protocol, consent duration, authentication exemption, API fields, liability, refund right, or regulatory role. Those details require the current local standard and law.

COMPONENTS

01 Customer and merchant experience [channel]
Owner: Merchant product owner
Captures the order and displays the bank-account payment option without collecting the customer’s bank credentials.

02 Payment-initiation service provider [gateway]
Owner: Payment-initiation service provider
Creates consent, selects the account provider, submits the authorised instruction, and retrieves status.

03 Directory, trust, and discovery [security]
Owner: Open-banking ecosystem or bilateral trust owner
Publishes trusted participant identity, endpoint, certificate, and capability information.

04 Account-provider API gateway [gateway]
Owner: Account-servicing payment-service provider
Authenticates the payment-initiation service provider, validates the request, and protects the bank boundary.

05 Bank authentication and consent service [control]
Owner: Account provider identity and channel team
Authenticates the customer and confirms the payment details and account under the bank’s applicable rules.

06 Bank payment engine and controls [application]
Owner: Account-provider payments team
Validates account, funds, limits, fraud, sanctions, routing, and rail rules before accepting the instruction.

07 Status, callback, and event service [service]
Owner: Account provider and PISP platform teams
Publishes state changes and supports explicit retrieval when a callback is late, duplicated, or lost.

08 Merchant order, refund, and reconciliation [operations]
Owner: Merchant finance and payment operations
Matches merchant order, bank payment, rail outcome, settlement or credit evidence, and any refund or return.

INTERFACES

01 Payment intent and consent request
ob-user-merchant -> ob-pisp | api | synchronous

02 Participant and endpoint lookup
ob-pisp -> ob-directory | api | synchronous

03 Consent and payment API
ob-pisp -> ob-aspsp-api | api | synchronous

04 Customer authentication hand-off
ob-aspsp-api -> ob-auth-consent | api | synchronous

05 Authorised payment instruction
ob-auth-consent -> ob-payment-engine | control | asynchronous

06 Payment state event
ob-payment-engine -> ob-status-events | event | asynchronous

07 Callback or status response
ob-status-events -> ob-pisp | api | asynchronous

08 Merchant return and status
ob-pisp -> ob-user-merchant | api | asynchronous

09 Settlement and reporting evidence
ob-payment-engine -> ob-merchant-recon | message | asynchronous

TRACES AND STRESS CASES

TRACE: Consent to merchant status

1. Choose account payment - Merchant intent created
2. Create consent - Consent requested
3. Protect the bank boundary - PISP authenticated
4. Authenticate and approve - Customer authorised
5. Process the payment - Bank payment accepted or rejected
6. Publish the state - Authoritative status available
7. Reconcile the order - Order and payment aligned

STRESS: Customer abandons authentication

Settlement: No settlement has occurred.
Funds: No payment debit is confirmed.
Owner: PISP customer operations
Safe action: Show pending or abandoned accurately and query before offering a new attempt.

STRESS: Callback is lost

Settlement: Settlement depends on that state and the underlying rail.
Funds: Funds may have moved even though the merchant page is pending.
Owner: PISP platform operations
Safe action: Retrieve status by the original payment identifier; never submit another payment to discover the first outcome.

STRESS: Payment later returns

Settlement: Any earlier settlement must be considered separately from the return.
Funds: The return is a new linked value movement.
Owner: Merchant payment operations
Safe action: Update order and finance state from the linked return; do not rewrite the original accepted state.