

BOS – Core Technical Appendix

MANDATORY FOR DEVELOPERS

This document defines non-negotiable technical contracts for implementing BOS. Every developer must read and follow this appendix before writing any production code.

1. Event Store – Technical Contract

- BOS is event-first. All truth is expressed as immutable events.
- No deletes, no overwrites. Corrections are new events.
- Every engine must emit events using a unified schema.

2. Mandatory Event Schema

- event_id (UUID), event_type, event_version
- business_id, branch_id (nullable)
- source_engine and actor (human, system, device, AI)
- reference object, payload (versioned), timestamps
- correction_of and provisional flags

3. Engine Access Rules

- Each engine may write only its own events.
- Cross-engine communication is read-only via queries or events.
- BI and AI never write operational data.

4. Actor & Identity Model

- Every event has exactly one actor.
- Actor types: Human, System, Device, AI.
- AI is advisory only and cannot execute operations.

5. Offline-First Rules

- Offline events are marked provisional.
- Synchronization preserves event order.
- Conflicts require human review. No silent merges.

6. Permissions Model

- Role defines responsibility.
- Permission defines atomic action.
- Scope defines data boundary (business, branch, project).

7. Data Lifecycle & Retention

- Events are never deleted.
- Financial data is immutable.
- PII is masked after retention period.
- Biometric references are deleted after exit + retention.

8. Config vs Data vs Code

- Country rules, VAT and compliance are configuration.
- Operational facts are data.
- Engines and validators are code.

9. Deployment & Migration Rules

- Schema changes are additive only.
- Feature flags control rollout per business.
- Rollback is done by disabling, not deleting.

10. Human Review States

- REVIEW_REQUIRED, DISPUTED, CONFIRMED, REJECTED.
- Used for cash differences, inventory variance, offline conflicts, AI advice.

Final Doctrine

- If an action cannot be explained as an event, corrected safely, and audited clearly — it does not belong in BOS.