

1. Use Case Anchor

Business Use Case	Objective	Actor
Automated, Auditable Account Opening for New Clients	End-to-end onboarding of new accounts accurately, efficiently, and traceably through AI-driven automation, with full auditability and compliance within NorthRock IT	AI Co-Worker Agent Team, Human Reviewers, Operations/Onboarding, Custodians, Compliance

2. Selected Bronze Design Pattern

Selected Pattern	Justification Based on Context
Append-Only Architecture	The core requirement for this use case is to preserve all ingested data—including client intake forms, custodian form libraries, client-provided statements, signature envelopes, workflow logs, and audit events—in its exact received state, with absolute traceability and immutability for audit and compliance. Incoming datasets arrive asynchronously (not strictly real-time or batch-only), and any modifications, deletions, or updates are strictly prohibited within the Bronze layer. The append-only pattern ensures that all data, regardless of structured, semi-structured, or unstructured format variability, is stored immutably and in sequence by arrival, supporting full replay and audit. This pattern best matches NorthRock's audit, compliance, and operational risk requirements without introducing transformation, normalization, or any lifecycle management beyond append.

3. Raw Dataset Inventory

Raw Dataset Name	Source System	Source Type	Arrival Mode	Format	Granularity
RawIntakeForms	Formstack	SaaS App/Forms	Push	JSON, PDF, Mixed	Per submission/event
RawClientDocuments	Client Upload / Edge	File/Object Store	Push	PDF, Image Files	Per-upload/document
RawCustodianForm_Libraries	Schwab, Fidelity	API/File Export	Pull/Scheduled	PDF, Docx, XLSX	Per snapshot/file
RawDocuSignEnvelopes	DocuSign	API/Export	Push	JSON, PDF, ZIP	Per envelope/event
Raw_Statements	Black Diamond (Opt), Client	Export/Upload	Push	PDF, XLSX	Per statement/upload
RawAuditEvent_Logs	Subatomic Deep Lens	API/Log Feed	Push	JSON, CSV, Text	Per event/log record

4. Field Preservation Rules

Raw Dataset	Field / Element	Preserved As-Is (Yes / No)	Rationale
RawIntakeForms	All fields in incoming payload	Yes	Required for full auditability/traceability and regulatory compliance.
RawClientDocuments	Entire file (PDF, image)	Yes	Must maintain actual client-submitted document with original properties; allows audit verification.
RawCustodianForm_Libraries	All form file bytes, metadata	Yes	Retained exactly as provided by custodian platform for regulatory and process audit.
RawDocuSignEnvelopes	Envelope JSON, PDFs, attachment	Yes	Each envelope and audit/detail (including structure, order) preserved for legal, audit, and trace review.
Raw_Statements	Entire file content	Yes	Statements required for account opening or verification are kept unaltered for evidence purposes.
RawAuditEvent_Logs	All event fields, message blobs	Yes	Ensures workflow and compliance traceability—no alteration to event semantics or structure permitted.

5. Mandatory Metadata Definition

Raw Dataset	Metadata Element	Purpose	Required (Yes / No)
RawIntakeForms	Source System	Provenance tracking	Yes
RawIntakeForms	Ingestion Timestamp	Ordering, audit, replay	Yes
RawIntakeForms	Source File/Event ID	Trace/uniqueness	Yes
RawClientDocuments	Source System	Provenance	Yes
RawClientDocuments	Ingestion Timestamp	Audit	Yes
RawClientDocuments	Source File Name	Traceability	Yes
RawCustodianForm_Libraries	Source System	Custodian-specific traceability	Yes
RawCustodianForm_Libraries	Collection Timestamp	Provenance and snapshot versioning	Yes
RawCustodianForm_Libraries	File Name/ID	File trace and deduplication in replay	Yes

Raw Dataset	Metadata Element	Purpose	Required (Yes / No)
RawDocuSignEnvelopes	Source System (DocuSign)	Provenance	Yes
RawDocuSignEnvelopes	Envelope/Event ID	Uniqueness	Yes
RawDocuSignEnvelopes	Ingestion Timestamp	Sequencing, replay	Yes
Raw_Statements	Source System	Data lineage	Yes
Raw_Statements	Ingestion Timestamp	Evidence/timeline	Yes
Raw_Statements	Original File Name	Trace/logging	Yes
RawAuditEvent_Logs	Source System	Audit lineage	Yes
RawAuditEvent_Logs	Event/Log ID	Traceability	Yes
RawAuditEvent_Logs	Ingestion Timestamp	Sequence and replay	Yes

6. Immutability and Replay Rules

Raw Dataset	Append-Only Enforced	Versioning Strategy	Replay Supported
RawIntakeForms	Yes	Event-sequence only (all arrivals appended, never replaced or deleted)	Yes
RawClientDocuments	Yes	Per file/date ingested (each entry immutable)	Yes
RawCustodianForm_Libraries	Yes	Timestamped snapshot per ingest (retain all versions)	Yes
RawDocuSignEnvelopes	Yes	Envelope/event-based (each entry immutable)	Yes
Raw_Statements	Yes	Per file ingestion (re-uploads as new version)	Yes
RawAuditEvent_Logs	Yes	Sequential event log (never modified or removed)	Yes

7. Raw Data Typing and Entity Surface (Descriptive Only)

Raw Dataset	Data Type Category	Logical Entity Present	Entity Description (As Observed)	Cardinality (If Observable)
RawIntakeForms	Semi-Structured (JSON, PDF)	intakeform, attachedfile	Each object is a submitted form (per event); may contain PDFs.	1 per submission
RawClientDocuments	Unstructured (PDF, image)	client_document	Each file = one client-provided document (e.g., statement, ID).	1 per file
RawCustodianForm_Libraries	Structured / Mixed (PDF, Docx, XLSX)	custodianformfile	Each record is full source form or file as provided by custodian.	N per collection batch
RawDocuSignEnvelopes	Semi-Structured (JSON, PDF, ZIP)	envelope	JSON record and attached files (PDFs) comprising envelope.	1 per envelope
Raw_Statements	Unstructured (PDF, XLSX)	statement_document	Each object is a source statement file.	1 per file
RawAuditEvent_Logs	Semi-Structured (JSON, CSV, text)	auditlogevent	Each record is a raw event logged by the workflow.	1 per log/event

8. Observed Raw Relationships (Non-Enforced)

Raw Dataset A	Raw Dataset B	Relationship Type	Relationship Evidence	Enforced (Yes / No)
RawIntakeForms	RawClientDocuments	Referenced or Co-Occurring	Form payload may include reference/file name or attachment attribute	No
RawDocuSignEnvelopes	RawIntakeForms	Embedded link (if present)	Envelope may embed completed form as PDF; observable only if provided	No
RawCustodianForm_Libraries	N/A	N/A	No explicit relationship observed in raw	No
Raw_Statements	N/A	N/A	No explicit relationship observed in raw	No
RawAuditEvent_Logs	All (potentially)	Referenced	Audit events may contain event data referencing original dataset's ID	No

Note: Only relationships explicitly present/observable in the raw payload (e.g., a filename, reference ID) are listed; no relationships are inferred or enforced. Absence of relationship is explicitly stated where no observable linkage exists.