

# Data Integration Pattern Library

*Outliers Professionals — Data & AI Centre™ · Guide · Professional*

Resource ID: res\_data\_integration\_pattern\_library | Audience: Data/AI & business leaders

## Purpose

This guide — Data Integration Pattern Library — establishes the standards, controls and operating expectations required to deliver trusted, governed and value-creating data and AI outcomes across the enterprise. It is part of the Outliers Professionals Data & AI Centre™ catalogue and aligns with NDPR/NDPA, ISO/IEC 27001, ISO/IEC 23894 (AI risk), ISO/IEC 42001 (AI management), NIST AI RMF, EU AI Act tiering principles, DAMA-DMBOK and CDMC.

## Who Should Use It

Audience: Data/AI & business leaders. Typical users include the Chief Data Officer, Chief AI Officer, Head of Analytics, Data Governance Council, Data Stewards, Model Risk Officers, CISO, DPO, Internal Audit, Risk & Compliance, and accountable business owners of data domains and AI use cases.

## When To Use It

Use at programme inception, during annual policy refresh, when on-boarding a new data domain, when proposing a new AI/ML use case, at every model lifecycle gate (intake → build → validation → deployment → monitoring → retirement), during regulatory or audit reviews, and when reporting to the Board Data & AI / Risk Committee.

## Step-by-Step Usage Guide

1. Confirm scope and accountable owner.
2. Inventory existing artefacts, data domains, models, prompts and decisions in-scope.
3. Map applicable obligations (NDPA, sectoral regulators, internal policy).
4. Complete each working section in this document with enterprise-specific evidence.
5. Calibrate risk tiers, controls and approval gates using the Outliers Data & AI tiering ladder (Tier 1 informational → Tier 4 high-risk autonomous).
6. Route the draft through Data Governance Council → Model Risk → Legal/DPO → Internal Audit.
7. Obtain executive approval and version-control the final artefact in the Data & AI evidence room.
8. Schedule the next review (default: annual; quarterly for Tier 3/4 models).

## Governance & Control Considerations

- Three-lines accountability: business owner (1LoD), Data Governance & Model Risk (2LoD), Internal Audit (3LoD).

- Data quality dimensions: accuracy, completeness, consistency, timeliness, validity, uniqueness — each rule logged in the Data Quality Rules Library.
- Model controls: documented purpose, training data lineage, validation, bias/fairness testing, explainability, human-in-the-loop, monitoring and drift thresholds.
- Privacy: NDPA lawful basis, DPIA where required, minimisation, retention, cross-border transfer assessment.
- Security: classification (Public / Internal / Confidential / Restricted), encryption in transit and at rest, access reviews, secrets management.
- Prompt & GenAI controls: prompt logging, sensitive-data redaction, jailbreak monitoring, vendor due-diligence, output review thresholds.

## Review & Approval Workflow

Draft → Data Governance Council review → Model Risk validation (if AI) → DPO/Legal sign-off → Executive Data & AI Committee approval → Board Data & AI Committee noting. Sign-offs captured in the approval register with date, version and rationale. Material changes trigger re-approval; minor edits logged as point releases.

## Implementation Notes

- Embed obligations into the SDLC / MLOps pipeline as policy-as-code checks where feasible.
- Pair every Tier 3/4 AI use case with a Model Card and a live Drift Log.
- Wire dashboards to the canonical KPI library: data quality index, model performance, drift incidents, privacy incidents, AI value-tracking.
- Provide role-specific enablement (executive, manager, practitioner, end-user) before go-live.
- Run an annual Data & AI maturity assessment to recalibrate priorities.

## Sample Working Template

Control Area	Owner	Frequency	Evidence	Status
Policy attestation	Data Owner	Annual	Signed attestation	Green
Access recertification	Domain Steward	Quarterly	IAM report	Amber
Quality monitoring	Data Quality Lead	Monthly	DQ dashboard	Green
Incident review	DPO / Model Risk	Per event	Incident log	Green

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