

Model Lifecycle Standard & LLMOps Runbook

Field	Value
Document ID	GOV-ML-001
Version	1.0
Effective Date	December 2024
Document Owner	Chief AI Officer
Classification	Internal Use
Review Cycle	Annual

Table of Contents

Model Lifecycle Standard & LLMOps Runbook..... 1

Model Lifecycle Standard & LLMOps Runbook..... 1

1. Purpose..... 1

2. Scope..... 1

3. Regulatory and Framework Alignment..... 2

4. Model Lifecycle Phases and Gates..... 2

4.1 Lifecycle Phase Overview..... 2

4.2 Gate 0: Design Approval..... 3

4.3 Gate 1: Development Complete..... 3

4.4 Gate 2: Validation Approval..... 4

4.5 Gate 3: Pre-Production Approval..... 4

4.6 Gate 4: Production Approval..... 5

4.7 Gate 5: Retirement Approval..... 5

5. CI/CD Pipeline Standards..... 6

5.1 Pipeline Architecture..... 6

5.2 Pipeline Stages..... 6

5.3 Branch Management Strategy..... 7

6. Deployment Strategies..... 7

6.1 Canary Deployment..... 7

6.2 Shadow Deployment..... 8

6.3 Blue-Green Deployment..... 8

7. Approval Processes and Authority Matrix..... 9

7.1 Decision Authority Matrix..... 9

7.2 Approval Workflow Process..... 9

7.3 Escalation Procedures..... 10

8. Rollback Procedures..... 10

8.1 Rollback Trigger Criteria..... 10

8.2 Rollback Execution Process..... 10

8.3 Rollback Validation Checklist.....	11
9. Operational Procedures.....	11
9.1 Model Performance Monitoring.....	11
9.2 Model Updates and Maintenance.....	12
9.3 Incident Response Procedures.....	12
10. RACI Matrix.....	13
11. Documentation and Artifacts.....	13
11.1 Required Documentation Templates.....	13
11.2 Artifact Management Standards.....	14
12. Training and Competency Requirements.....	14
12.1 Role-Based Training Matrix.....	14
12.2 Competency Validation.....	15
13. Audit and Compliance.....	15
13.1 Audit Trail Requirements.....	15
13.2 Regulatory Compliance Validation.....	15
14. Performance Metrics and KPIs.....	16
14.1 Operational Metrics.....	16
14.2 Business Value Metrics.....	16
15. Implementation Timeline.....	16
15.1 Phased Rollout Plan.....	16
15.2 Success Criteria.....	17

Model Lifecycle Standard & LLMOps Runbook

1. Purpose

This document establishes comprehensive governance standards for managing the complete lifecycle of machine learning models and large language models (LLMs) within the organization. The standard defines mandatory lifecycle gates, approval processes, continuous integration and continuous deployment (CI/CD) pipelines, and rollback procedures to ensure controlled, auditable, and reliable model operations from initial design through retirement.

The runbook serves as both a governance framework and operational manual, providing specific procedures for model development teams, MLOps engineers, and stakeholders involved in model lifecycle management. It ensures consistency across all model development initiatives while maintaining alignment with enterprise risk management and regulatory compliance requirements.

2. Scope

This standard applies to all artificial intelligence and machine learning models developed, deployed, or operated within the organization, including: