

ENTERPRISE MOTOR INSURANCE CLAIMS PROCESS TRANSFORMATION

End-to-End Optimisation, Automation & Responsible AI Governance

(Enterprise General Insurance Case Study)

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1.0 Executive Summary

This case study presents the structured transformation of the Motor Insurance Claims lifecycle within a large-scale general insurance operating model. The initiative addresses operational inefficiencies, fraud exposure, SLA risk, and governance gaps in a high-volume claims environment.

The transformation objective was not automation alone, but:

- Strengthening operational control
- Improving compliance defensibility
- Reducing manual handling effort
- Introducing structured fraud risk scoring
- Embedding human-in-the-loop AI governance
- Enhancing scalability during volume surges

Estimated Impact

- 25–35% reduction in manual effort
- 30% improvement in processing time
- 40% reduction in SLA breaches
- 15–20% uplift in fraud detection precision
- Significant improvement in audit traceability

2.0 Industry & Operating Context

2.1 General Insurance Claims Environment

Motor claims are:

- High-volume
- Time-sensitive
- Fraud-prone
- Financially material
- Regulatorily monitored
- Customer experience critical

Claims operations influence:

- Loss ratio
- Operational expense ratio
- Brand trust
- Regulatory posture

2.2 Regulatory & Governance Considerations

Claims handling must ensure:

- Transparent decision rationale
- Timely processing
- Financial integrity
- Segregation of duties
- Data privacy compliance
- Audit traceability

Automation must therefore balance:

Efficiency + Control + Accountability

3.0 Problem Statement

The current-state claims process exhibited:

- Excessive manual intervention
- Re-keying errors
- Fragmented document validation
- Reactive fraud detection
- Weak SLA monitoring
- Limited audit defensibility

These deficiencies increase:

- Cost base
- Fraud leakage
- Compliance risk
- Customer dissatisfaction

4.0 Current State (As-Is) Analysis

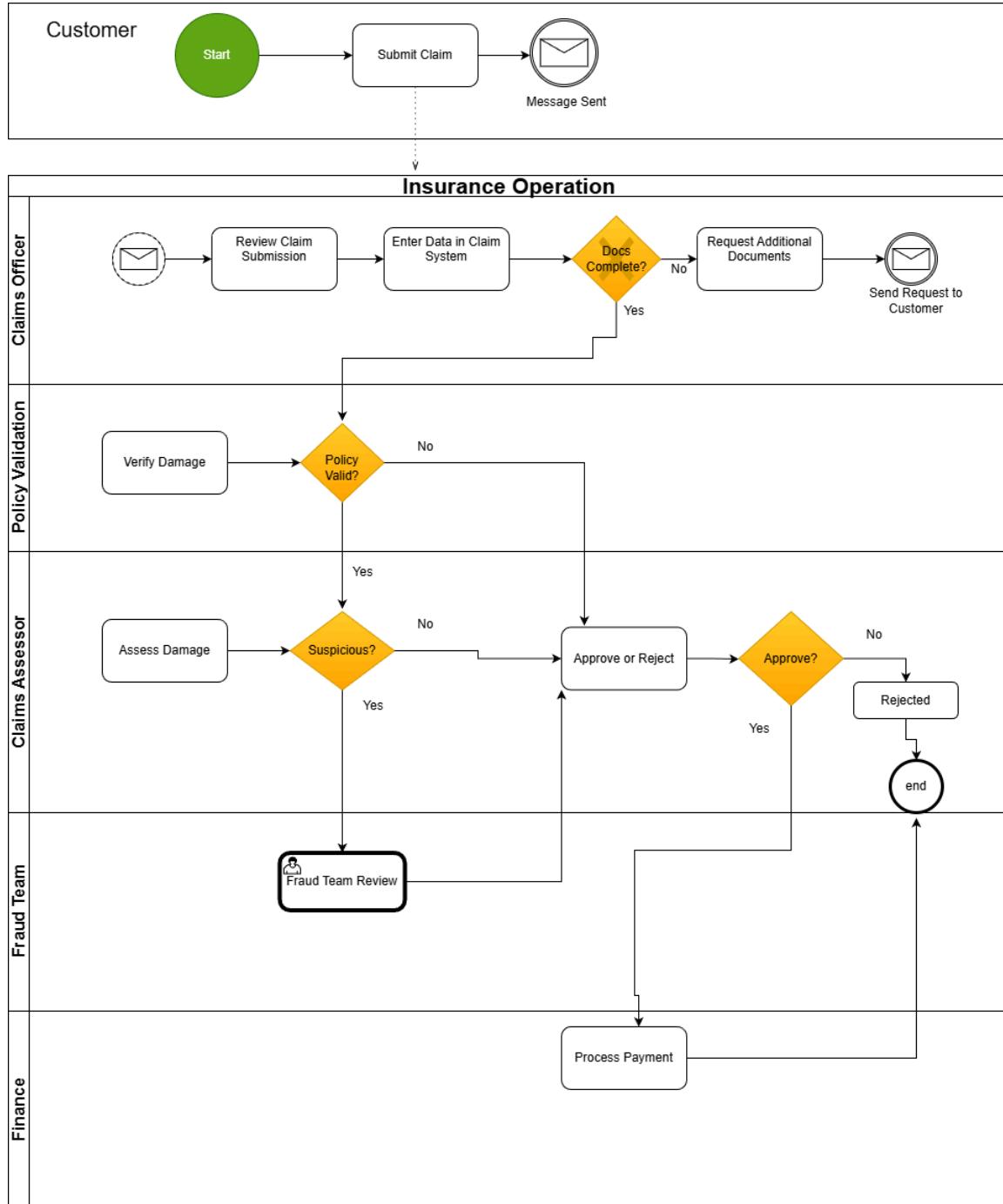
4.1 Process Overview

The As-Is workflow includes:

1. Claim submission
2. Manual review
3. Data re-entry
4. Policy verification
5. Document validation
6. Damage assessment
7. Fraud escalation (if suspected)
8. Settlement decision
9. Payment
10. Closure

4.1.1 As-Is Process Map Using BPMN 2.0

This section contains various process maps contributing to a better understanding of how the process is performed pre-automation.



4.2 Current Weaknesses

Manual Re-entry

- Error-prone
- Delays processing
- Increases rework

Fraud Detection

- Triggered late
- No structured risk scoring
- Inconsistent judgment

SLA Monitoring

- Manual
- No early warning triggers

Governance Gaps

- Informal documentation
- Limited decision logging

5.0 Baseline Performance Metrics

Metric	Current State
Avg Handling Time	5–7 days
SLA Breach Rate	18%
Manual Intervention	High
Fraud Detection	Reactive
Audit Logging	Manual

6.0 Risk & Control Gap Assessment

6.1 Key Risks

- Incorrect eligibility
- Fraudulent approval
- SLA non-compliance
- Payment errors
- AI bias (future state risk)

6.2 Enterprise Risk & Control Matrix

Risk	Control	Type	Owner
Eligibility error	Rule engine	Preventive	Claims Ops
Fraud approval	AI + review	Preventive/Detective	Fraud Team
SLA breach	Timer alerts	Detective	Ops Manager
Payment error	Segregation of duties	Preventive	Finance
Documentation gap	Mandatory validation	Preventive	Claims Officer

Residual risk reduced to Low/Medium levels.

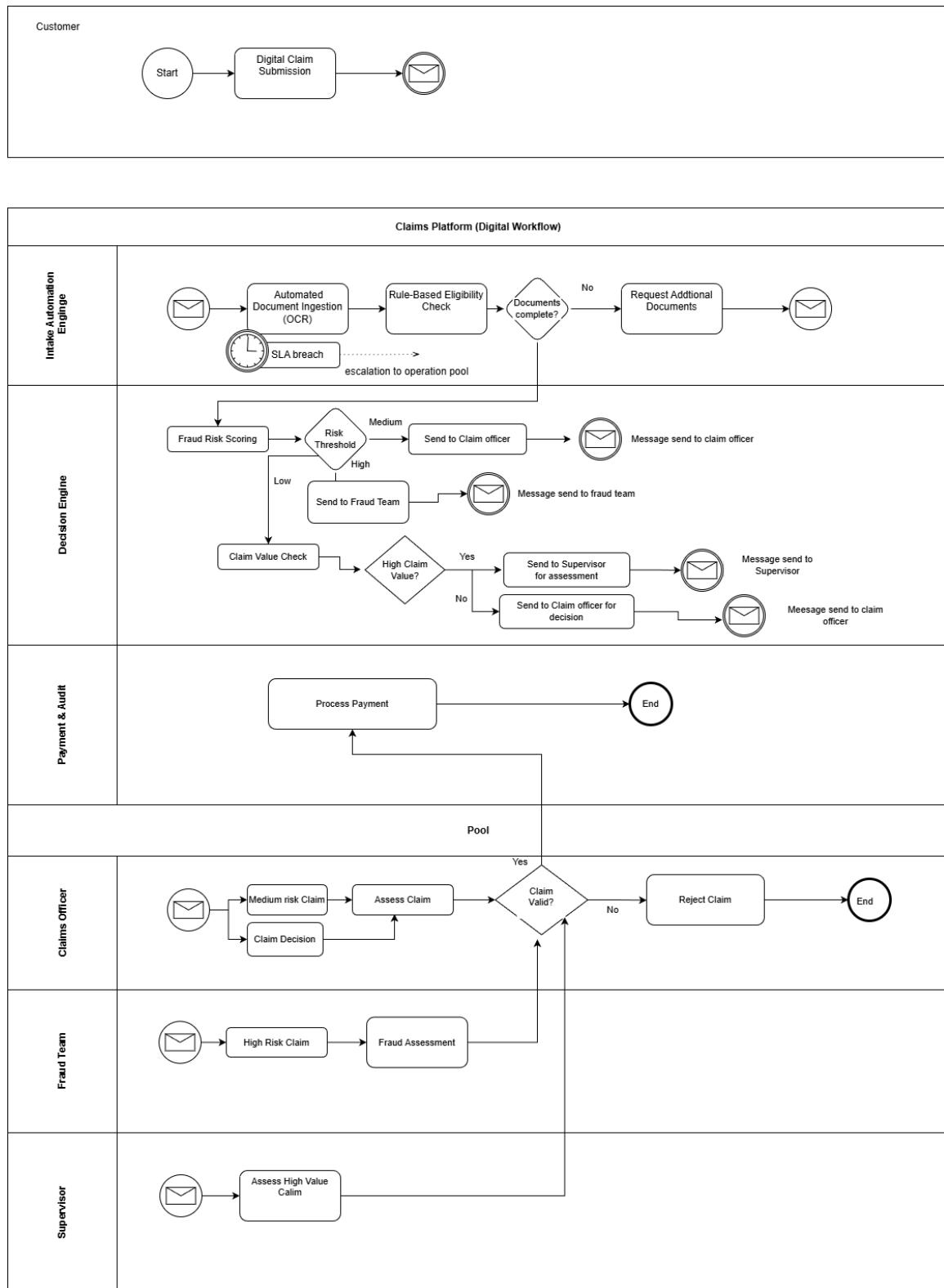
7.0 Future State (To-Be) Design Principles

- Automation-first for predictable tasks
- Risk-tier routing
- Human-in-the-loop governance
- Embedded audit logging
- Proactive SLA visibility
- Responsible AI oversight

8.0 To-Be Process Overview

1. Structured digital claim intake
2. OCR-based document ingestion
3. Rule-based eligibility validation
4. Fraud risk scoring (0–100)
5. Risk-tier routing
6. Supervisor approval (high value)
7. Automated payment
8. SLA monitoring
9. Audit trail logging

8.0.1 To-Be BPMN Diagram



9.0 Automation Architecture

9.1 Layered Architecture

Customer Layer

Digital Claim Portal

Automation Layer

- UiPath Orchestrator
- Unattended Robots
- Queue Management

Processing Layer

- OCR Engine
- Business Rule Engine
- Fraud Scoring API
- SLA Monitoring Bot

Core Systems Layer

- Claims System
- Policy Database
- Payment System
- Audit Database

Governance Layer

- BI Dashboard
- Risk Monitoring
- Model Performance Monitoring

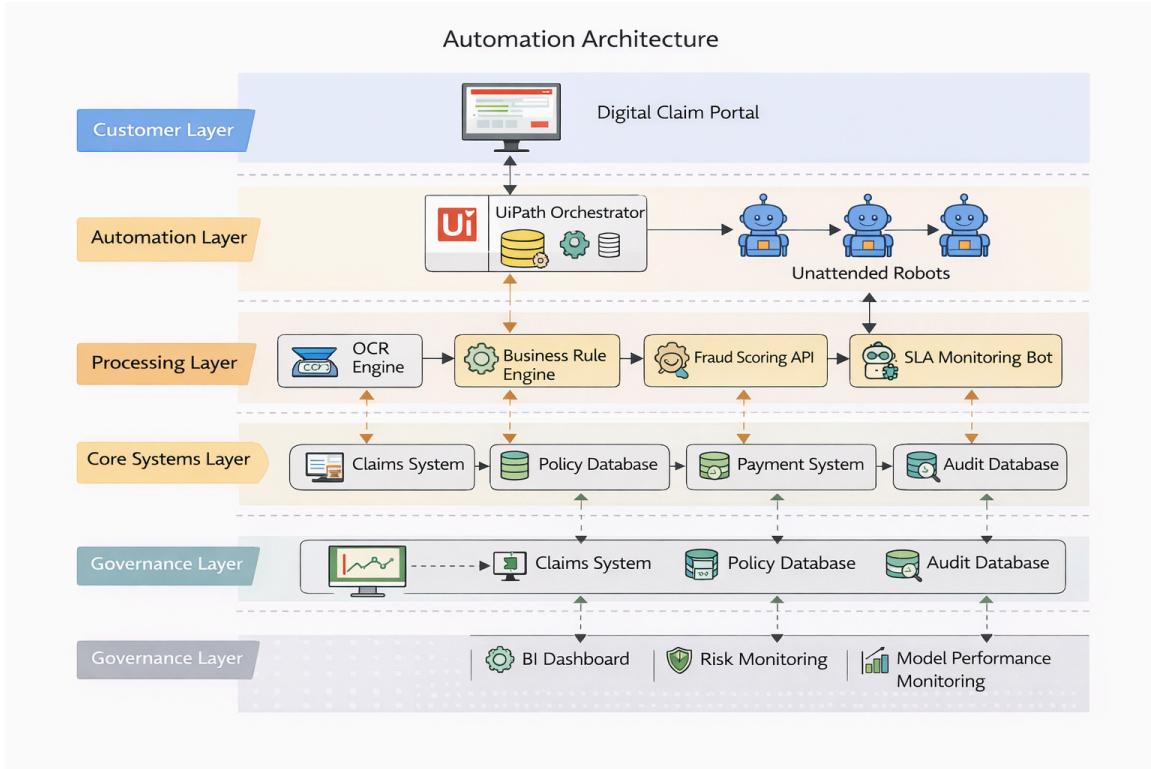


Figure: Automation Architecture Diagram

10.0 Fraud Risk Scoring Model

10.1 Feature Logic

Fraud score derived from:

- Historical anomaly detection
- Claim value deviation
- Policy tenure
- Claims frequency
- Document inconsistencies

Output:

Risk Score (0–100)

10.2 Risk Routing

- 0–40 → Straight-through
- 41–70 → Claims Officer review
- 71+ → Fraud Team escalation

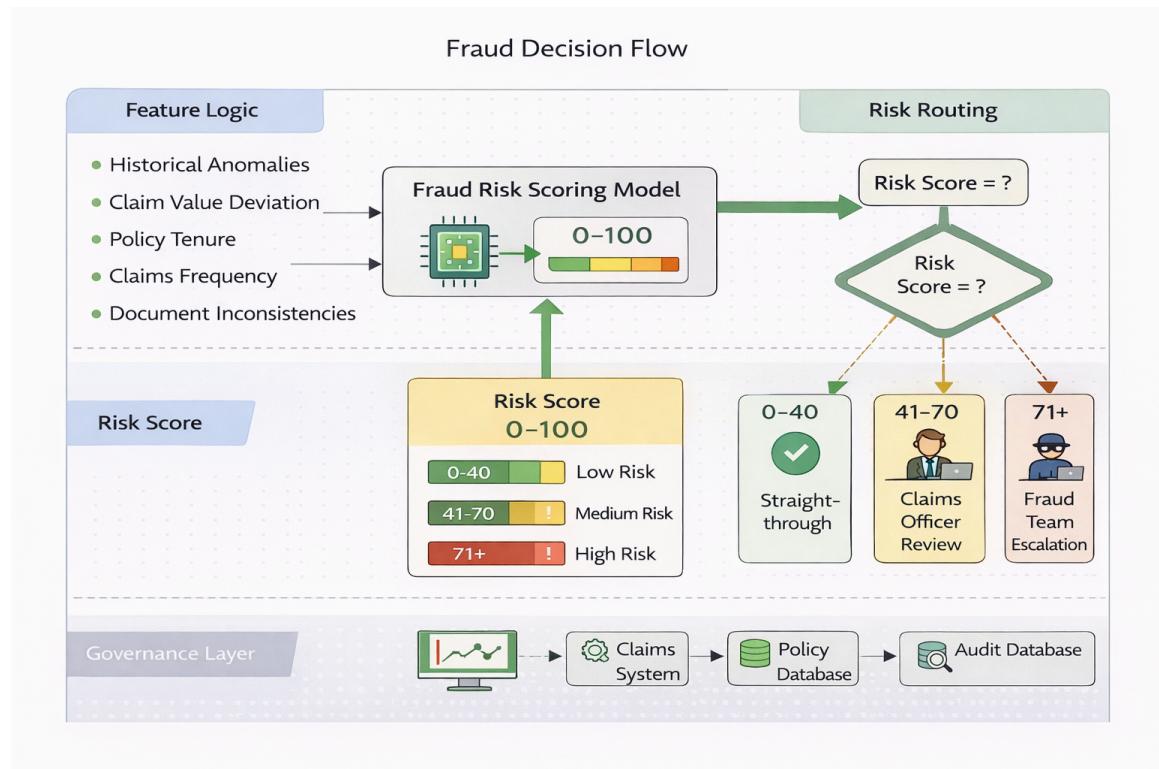


Figure: Fraud Decision Flow Diagram Here

11.0 Responsible AI Governance Framework

- AI provides assistive scoring only
- No automated rejection
- Human override capability
- Full decision logging
- Model review cycle
- Bias monitoring controls

This ensures compliance defensibility.

12.0 Exception Handling Strategy

Business Exceptions

- Missing documents
- Invalid policy
- High fraud score

System Exceptions

- OCR failure
- API timeout
- System downtime

Retry policy: 3 attempts before escalation.

13.0 SLA Monitoring Framework

Automated SLA timer:

- Intake timestamp tracking
- 80% threshold alert
- Supervisor notification at risk
- Dashboard visibility



Figure: SLA Dashboard Concept Here

14.0 KPI & Performance Framework

KPI	Target
Straight-through rate	50–60%
SLA breach	<5%
Fraud uplift	+15%
Manual touchpoints	-30%
Avg handling time	<4 days

15.0 Financial Impact Assessment

Estimated savings:

- 30% labour reduction
- Fraud leakage mitigation
- Reduced rework
- Error correction savings

ROI expected within 12–18 months.

16.0 Implementation Roadmap

Phase 1 – Process standardisation

Phase 2 – RPA pilot

Phase 3 – Fraud model integration

Phase 4 – SLA dashboard rollout

Phase 5 – Governance audit validation

17.0 Change Management & Stakeholder Alignment

Stakeholders:

- Claims Operations
- Fraud Team
- Finance
- Risk & Compliance
- IT
- Data Science

Activities:

- Workshops
- UAT testing
- Control validation
- Training
- Governance sign-off

18.0 Strategic Impact

The transformation shifts the operating model from:

Manual & Reactive -> Automated, Risk-Aware & Governed

It demonstrates:

- Enterprise process maturity

- Governance embedding
- Responsible AI enablement
- Operational scalability
- Financial services readiness

19.0 Scalability & Disaster Readiness

During catastrophic events:

- Claim volume spikes dramatically
- Manual processes fail under surge

Automation enables:

- Queue prioritisation
- Resource scaling
- Controlled throughput
- SLA protection

20.0 Conclusion

This case study demonstrates how to modernise a high-volume insurance workflow while embedding governance, compliance, fraud prevention, and responsible AI oversight.

It reflects:

- Strategic thinking
- Risk awareness
- Enterprise alignment
- Automation maturity

This is the level of deliverables expected within large financial institutions.

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