



NAFFCO

PASSION TO PROTECT

UAE AI AUDIT FRAMEWORK FOR FIRE & LIFE SAFETY

National AI-Powered Conformity Assessment
Oversight System

For International Testing Laboratories, Certification Bodies
and Fire & Life Safety Equipment



DATABASE
SYNC



INCIDENT
ALERT



REAL-T
REPOR



RISK
ANALYTICS



THREAT
DETECTION

EXECUTIVE SUMMARY

This proposal establishes a **National AI-Powered Conformity Assessment Oversight System** for the UAE to regulate, monitor, audit, and continuously supervise:

- International Testing Laboratories
- Accredited Certification Bodies
- Fire & Life Safety Equipment Manufacturers
- Product Testing Programs
- Market Surveillance Activities
- Regulatory Compliance Programs

The objective is to create a **Government-owned AI Audit Platform** that enhances safety, reduces fraud, accelerates approvals, improves transparency, and generates sustainable government revenue through AI-enabled regulatory services.



CURRENT CHALLENGES

EXISTING ISSUES

- Manual review of laboratory reports.
- Large volumes of test reports.
- Potential report manipulation.
- Delayed certification approvals.
- Limited surveillance after certification.
- Difficulty monitoring international laboratories.
- Resource-intensive authority audits.
- Inconsistent interpretation of standards.

RISKS

- Non-compliant fire safety products entering UAE market.
- Counterfeit certificates.
- Falsified test reports.
- Safety failures in buildings and infrastructure.





AUDIT

- International Testing Laboratories
- Certification Bodies
- Witness Testing Activities
- Factory Audits
- Product Certifications



ANALYZE

- Test Reports
- Calibration Records
- Quality Manuals
- Accreditation Certificates
- Audit Reports
- Surveillance Reports



Monitor

- Product Lifecycle
- Market Surveillance
- Certificate Validity
- Recalls
- Non-Conformities



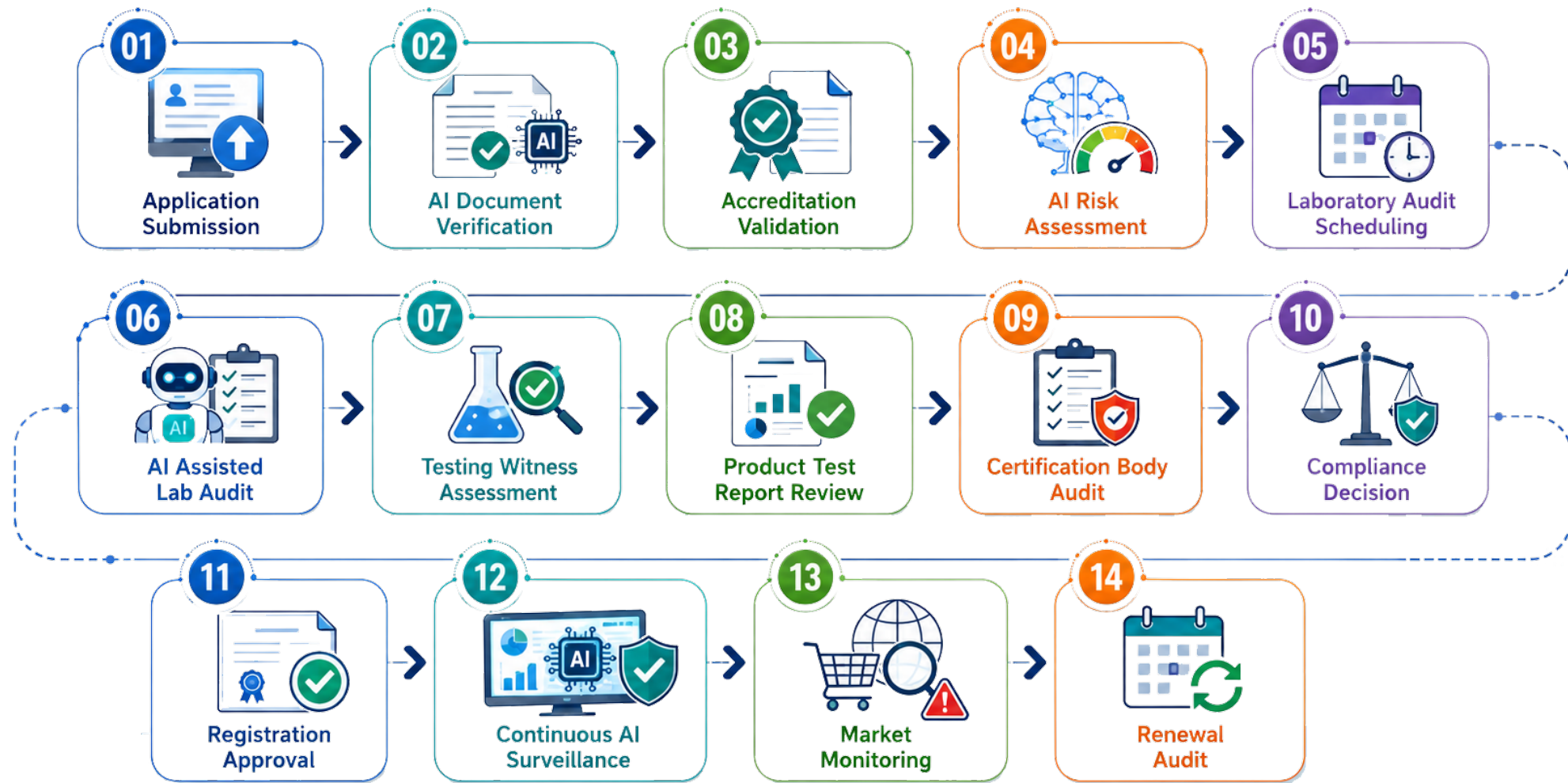
GENERATE

- AI Audit Reports
- Risk Scores
- Compliance Dashboards
- Corrective Action Requests
- Regulatory Decisions

PROPOSED SOLUTION

UAE National AI Regulatory Oversight Platform

A centralized Generative AI system operated by the Government Authority.



OVERALL PROCESS FLOW

Detailed AI Audit Process

Phase 1 – Registration

Applicant

International Laboratory or Certification Body submits:

- ISO 17025 Accreditation
- ISO 17065 Accreditation
- Scope of Accreditation
- Test Methods
- Quality Manuals
- Previous Audit Reports
- Staff Competency Records

AI Functions

- OCR extraction
- Document authentication
- Accreditation verification
- Cross-check with accreditation bodies
- Risk scoring



Detailed AI Audit Process

Phase 2 – AI Accreditation Verification

AI Checks

Accreditation databases:

- ISO 17025
- ISO 17065
- ILAC
- IAF
- National Accreditation Bodies

AI Functions

- Validity
- Scope
- Expiry
- Suspensions
- Restrictions



Detailed AI Audit Process

Phase 3 – AI Laboratory Audit

AI Pre-Audit

Review:

- Procedures
- Calibration Records
- Personnel Qualifications
- Equipment Maintenance
- Internal Audits
- Proficiency Testing

AI Identifies

- Missing records
- Expired calibration
- Competency gaps
- Repeated non-conformities



Detailed AI Audit Process

Onsite Audit

AI Mobile Audit Application

Auditors capture:

- Photos
- Videos
- Interviews
- Equipment Records

AI automatically:

- Transcribes interviews
- Detects anomalies
- Maps findings against standards

Standards Reviewed

- ISO 17025
- UAE Fire Code
- NFPA Standards
- EN Standards
- UL Standards
- IEC Standards



Detailed AI Audit Process

Phase 4 – Product Testing Oversight

Witness Testing

AI monitors:

- Test setup
- Instrument calibration
- Environmental conditions
- Sample identification

AI Functions

Computer Vision Verification

Checks:

- Correct specimen
- Correct dimensions
- Test sequence compliance
- Test duration



Detailed AI Audit Process

Test Report Validation

AI reviews:

- Test data
- Graphs Images
- Pass/Fail criteria

Detects:

Manipulated data
Copy-paste reports
Statistical anomalies
Data inconsistencies

Output

AI Compliance Report

Confidence Score:

- 95% Genuine
- 4% Anomaly
- 1% Fraud Risk



Detailed AI Audit Process

Phase 5 – Certification Body Audit

Certification Activities

- Factory audits
- Certification decisions
- Surveillance audits
- Product listings
- Suspension records

AI Verification

Checks:

- Proper audit intervals
- Auditor competence
- Sampling adequacy
- Decision impartiality

Output

Certification Body Risk Rating

- Gold
- Silver
- Bronze
- Watch List



Detailed AI Audit Process

Phase 6 – Product Registration Approval

AI consolidates:

- Lab Audit
- Product Testing
- Certification Audit

Generates:

Approval Recommendation

- Approve
- Approve with Conditions
- Further Review
- Reject

Final authority approval remains human-controlled.



Detailed AI Audit Process

Phase 7 – Continuous Surveillance

AI Surveillance Engine:
Monitors continuously:

Laboratories

- Accreditation status
- Scope changes
- Suspensions

Certification Bodies

- Certificate validity
- Surveillance completion

Products

- Complaints
- Incidents
- Failures
- Recalls



Detailed AI Audit Process

Phase 8 – Market Surveillance

AI Market Monitoring

Sources:

- Customs data
- Product registration database
- Building inspection data
- Complaint systems
- Online marketplaces

AI Detects

- Unapproved products
- Counterfeit certificates
- Expired certifications
- High-risk manufacturers



REVENUE STREAM 1

AI Registration Fee

Charged to:

- Testing Laboratories
- Certification Bodies

Service	Fee (AED)
Initial Registration	25,000
Renewal	15,000

REVENUE STREAM 2

AI Audit Fee

Audit Type	Fee (AED)
Laboratory Audit	50,000
Certification Body Audit	50,000
Witness Testing Audit	15,000

REVENUE STREAM 3

AI Compliance Monitoring Subscription

Annual subscription

Category	Fee (AED)
Small Organization	25,000
Medium Organization	50,000
Large Organization	100,000

GOVERNMENT REVENUE GENERATION MODEL

REVENUE STREAM 4

Product Registration AI Review

Per Product.

Service	Fee (AED)
New Product	2,500
Product Renewal	1,000

REVENUE STREAM 5

AI Fast-Track Review

Premium service

Service	Fee (AED)
5-Day Review	5,000
48-Hour Review	10,000

REVENUE STREAM 6

API Integration

Laboratories connect systems directly.

Service	Fee (AED)
API License	50,000/year

GOVERNMENT REVENUE GENERATION MODEL

Assumptions:

100 Laboratories

$100 \times \text{AED } 25,000$
= AED 2.5 Million

80 Certification Bodies

$80 \times \text{AED } 25,000$
= AED 2.0 Million

5,000 Products

$5,000 \times \text{AED } 2,500$
= AED 12.5 Million

AI Monitoring Subscription

= AED 8 Million

Audits

= AED 10 Million

Fast Track Services

= AED 5 Million

API Services

= AED 2 Million

Estimated Annual Revenue

AED 42 Million+ per year

EXAMPLE ANNUAL REVENUE

Potentially higher as market participation grows.

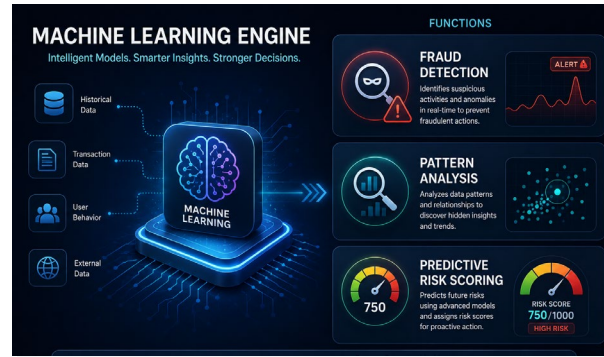
Core Components



Generative AI Engine

Functions:

- Audit report generation
- Compliance analysis
- Risk assessment
- Regulatory recommendations



Machine Learning Engine

Functions:

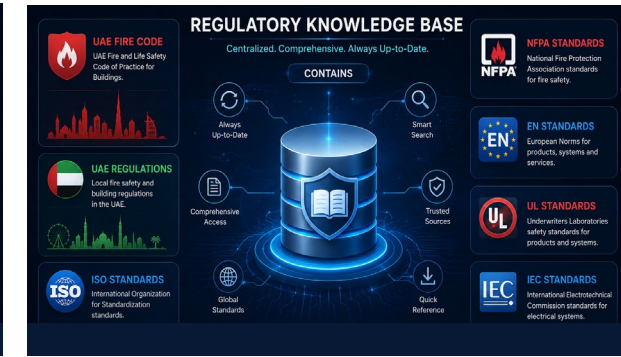
- Fraud detection
- Pattern analysis
- Predictive risk scoring



Computer Vision

Functions:

- Witness testing oversight
- Factory audits
- Equipment verification

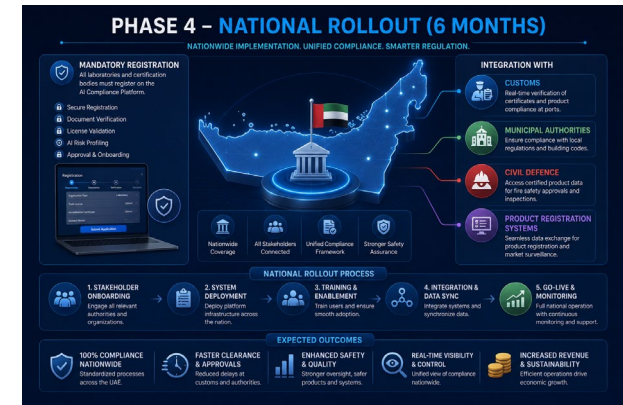
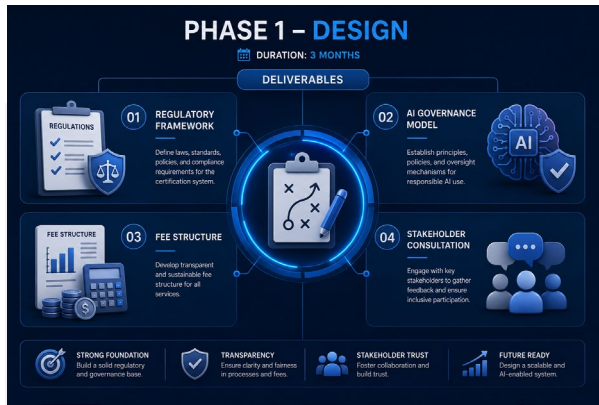


Regulatory Knowledge Base

Contains:

- UAE Fire Code
- UAE Regulations
- ISO Standards
- NFPA Standards
- EN Standards
- UL Standards
- IEC Standards

TECHNOLOGY ARCHITECTURE



Phase 1 – Design (3 Months)

Deliverables:

- Regulatory framework
- AI governance model
- Fee structure
- Stakeholder consultation

Phase 2 – Development (6 Months)

Develop:

- AI Platform
- Portal
- Mobile Audit Application
- Dashboard

Phase 3 – Pilot (3 Months)

Pilot:

- 10 Laboratories
- 5 Certification Bodies

Measure:

- Audit efficiency
- Detection rates
- Revenue generation

Phase 4 – National Rollout (6 Months)

Mandatory registration.

Integration with:

- Customs
- Municipal Authorities
- Civil Defence
- Product Registration Systems

PROJECT IMPLEMENTATION PLAN



Regulatory Advantages

- Stronger control over international laboratories.
- Enhanced public safety.
- Improved compliance monitoring.
- Reduced counterfeit certifications.
- Faster approvals.



Financial Advantages

- New recurring revenue stream.
- Reduced audit manpower costs.
- Increased efficiency.



Strategic Advantages

- Position UAE as global leader in AI-powered conformity assessment.
- Support UAE AI Strategy.
- Support smart government transformation.



Operational Advantages

- 24/7 monitoring.
- Automated surveillance.
- Real-time risk alerts.
- Predictive compliance management.

KEY ADVANTAGES FOR UAE GOVERNMENT

PROPOSED GOVERNANCE MODEL

Expected Outcomes (Year 1–3)

- 70–80% reduction in manual document review effort.
- 50% faster approval timelines.
- Improved detection of fraudulent reports and certificates.
- Centralized national database of approved fire and life safety products.
- AED 40–60 million annual recurring revenue potential.
- Establishment of the UAE as a regional hub for AI-driven conformity assessment and fire safety compliance oversight.





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