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# AI-Driven Public Procurement: The Next Generation of e-GP

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# Outline

1. Why AI is Essential for Next-Generation e-GP
2. Key Usage Areas for Agentic-Generative AI in e-GP
3. Strategic Bid Document Preparation: AI-Driven Market Intelligence & Drafting
4. Bid Preparation & Submission: AI-Driven Bid Guidance & Error Prevention
5. AI Suggest Bid Evaluation: Automated Compliance, Ranking & Risk Analytics
6. Functional Overview: AI Based Evaluation Module
7. AI in e-CMS: Automated Milestone Tracking, Performance Analytics & Risk Management
8. AI Driven Helpdesk Support: Chatbot
9. AI Prediction: Fraud, Collusion & Anomaly

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# Why AI is Essential for Next-Generation e-GP, How it works???

01

**Process Optimization & Simplification**

Automated workflows for faster procurement

02

**Time Optimization**

Rapid tender-to-award cycles via intelligent automation

03

**Eliminating Human Error**

Automated BOQs calculation and compliance verification

04

**Environmental Sustainability**

Paperless governance and green supply chain tracking

05

**Economic Sustainability**

Value for money through fair price prediction

06

**Social Sustainability**

Predictive Equal Opportunity for SME

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# Key Usage Areas for Agentic-Generative AI in e-GP

# Strategic Bid Document Preparation: AI-Driven Market Intelligence & Drafting

**Bid Document Preparation**

**01 Automated Bid Document Generation**

Standardized bidding documents generated **from historical templates**

**02 Predictive Technical Specification Drafting**

Automated, precision specifications benchmarked **against historical data**

**03 Automated Historical Clause & Demand Aggregation Analysis**

Reuses legal terms **from past successful bid documents and bulk volume savings**.

**04 Automated BOQ Creation**

Generates initial BOQs using project requirements, **historical data and marketplace.**

**05 Generate RFP & TOR**

Generates structured proposals and detailed work requirements **against past successful bid RFPs**.

**06 Procuring Entity-in-the-Loop Validation and Approval**

Officer oversight and administrative approval for all AI drafts

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# Bid Preparation & Submission: AI-Driven Bid Guidance & Error Prevention




1. **Automated Bid Document Summarization**
   Automated tender document summaries **for clear bidder understanding**

2. **Smart Eligibility Pre-Screening**
   Instant self-assessment **to identify bidder capacity and qualification criteria**

3. **Interactive Requirement Checklist**
   Auto-extracted checklists from bid document

4. **Automated Bid Completeness Check**
   Pre-submission scanning **to instantly flag missing documents and forms**

5. **BOQ Arithmetic Validation**
   Automated BOQ rate and total verification to **eliminate human errors**

6. **Bidder-in-the-Loop for Bid Submission Confirmation**

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# AI Suggest Bid Evaluation:
# Automated Compliance, Ranking & Risk Analytics

**AI Suggest Bid Evaluation**

01 **Automated Extraction of Evaluation Matrix**

Instant extraction of bid criteria into standardized matrices

02 **Automated Technical Compliance Verification**

Automated specification cross-checks **to highlight non-compliance**

03 **Generated Price & Rate Analysis for Financial Qualification**

Market benchmark comparison **to predict front-loading and abnormal pricing**

04 **Red Flag Risk Assessment**

Predictive risk assessing **against default and litigation history**

05 **Automated Draft Evaluation Report**

Preliminary comparative scoring summaries for committee review

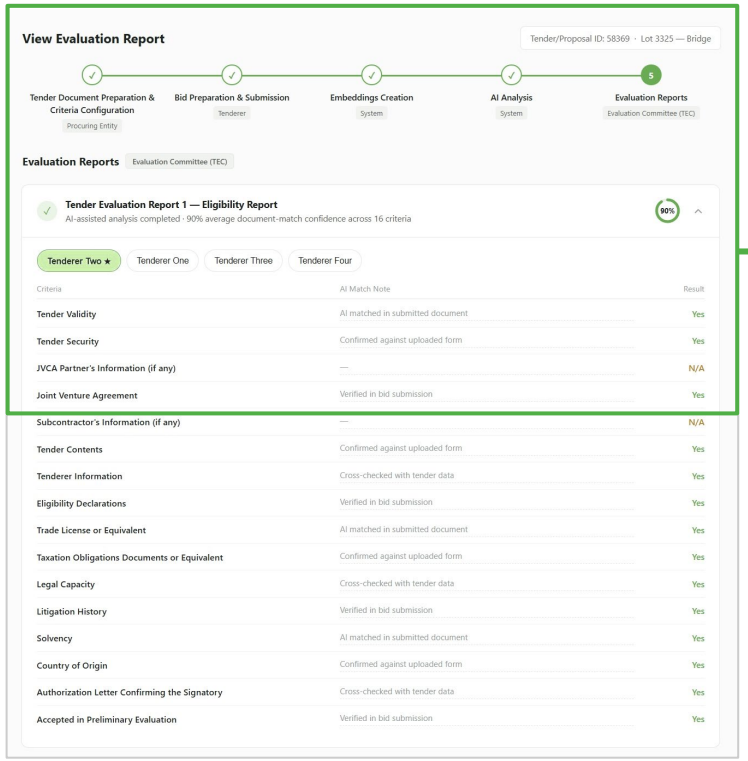
6 **Evaluation Committee -in-the-Loop Review and Approval**

Mandatory committee verification and final administrative approval

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# Functional Overview: AI Based Evaluation Module

*Full interface overview*




## Eligibility Report (TER1) — Part 1 of 2

### View Evaluation Report

Tender/Proposal ID: 58369 · Lot 3325 — Bridge

1. **Tender Document Preparation & Criteria Configuration** — Procuring Entity
2. **Bid Preparation & Submission** — Tenderer
3. **Embeddings Creation** — System
4. **AI Analysis** — System
5. **Evaluation Reports** — Evaluation Committee (TEC)

### Evaluation Reports — Evaluation Committee (TEC)

**Tender Evaluation Report 1 — Eligibility Report**

AI-assisted analysis completed · 90% average document-match confidence across 16 criteria

90%

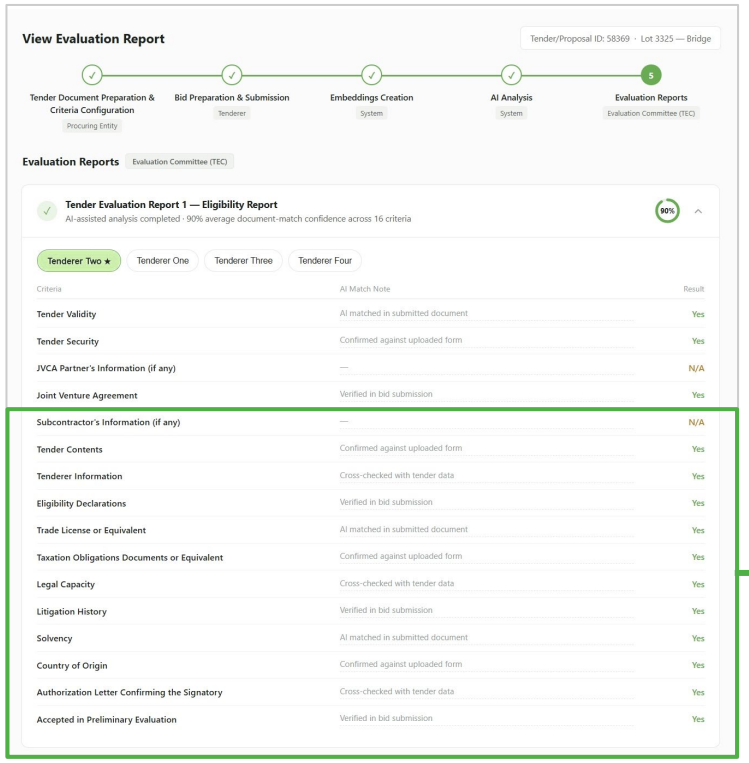
**Tenderer Two ★** | Tenderer One | Tenderer Three | Tenderer Four

| Criteria | AI Match Note | Result |
|---|---|---|
| Tender Validity | AI matched in submitted document | Yes |
| Tender Security | Confirmed against uploaded form | Yes |
| JVCA Partner's Information (if any) | — | N/A |
| Joint Venture Agreement | Verified in bid submission | Yes |

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# Functional Overview: AI Based Evaluation Module

*Full interface overview*



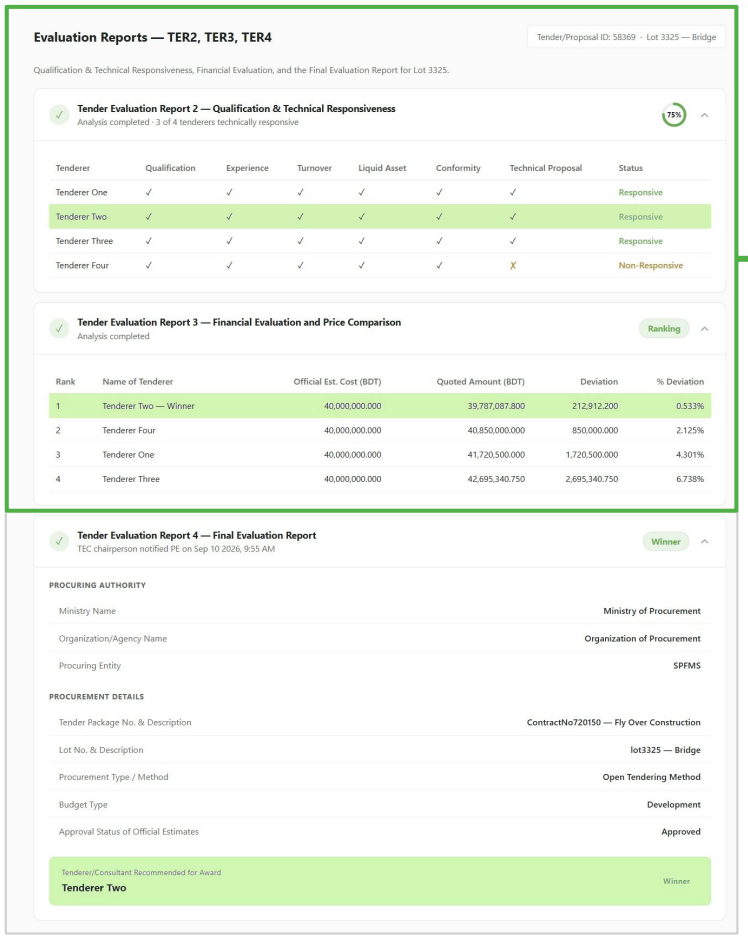

## Eligibility Report (TER1) — Part 1 of 2

| | | |
|---|---|---|
| Subcontractor's Information (if any) | — | N/A |
| Tender Contents | Confirmed against uploaded form | Yes |
| Tenderer Information | Cross-checked with tender data | Yes |
| Eligibility Declarations | Verified in bid submission | Yes |
| Trade License or Equivalent | AI matched in submitted document | Yes |
| Taxation Obligations Documents or Equivalent | Confirmed against uploaded form | Yes |
| Legal Capacity | Cross-checked with tender data | Yes |
| Litigation History | Verified in bid submission | Yes |
| Solvency | AI matched in submitted document | Yes |
| Country of Origin | Confirmed against uploaded form | No |
| Authorization Letter Confirming the Signatory | Cross-checked with tender data | Yes |
| Accepted in Preliminary Evaluation | Verified in bid submission | Yes |

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# Functional Overview: AI Based Evaluation Module

*Full interface overview*




## Evaluation Reports — TER2, TER3, TER4

Tender/Proposal ID: 58369 · Lot 3325 — Bridge

Qualification & Technical Responsiveness, Financial Evaluation, and the Final Evaluation Report for Lot 3325.

### Tender Evaluation Report 2 — Qualification & Technical Responsiveness

Analysis completed · 4 of 4 tenderers technically responsive

100%

| Tenderer | Qualification | Experience | Turnover | Liquid Asset | Conformity | SPP | Technical Proposal | Status |
|---|---|---|---|---|---|---|---|---|
| Tenderer One | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Responsive |
| **Tenderer Two** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Responsive |
| Tenderer Three | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Responsive |
| Tenderer Four | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ | Responsive |

### Tender Evaluation Report 3 — Financial Evaluation and Price Comparison

Analysis completed

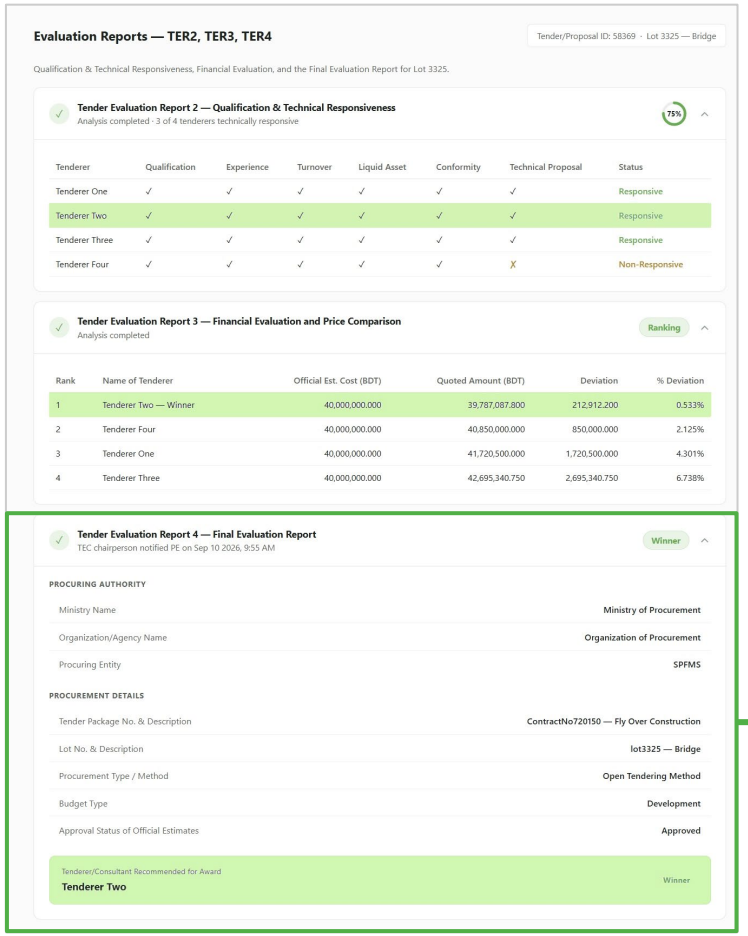
Ranking

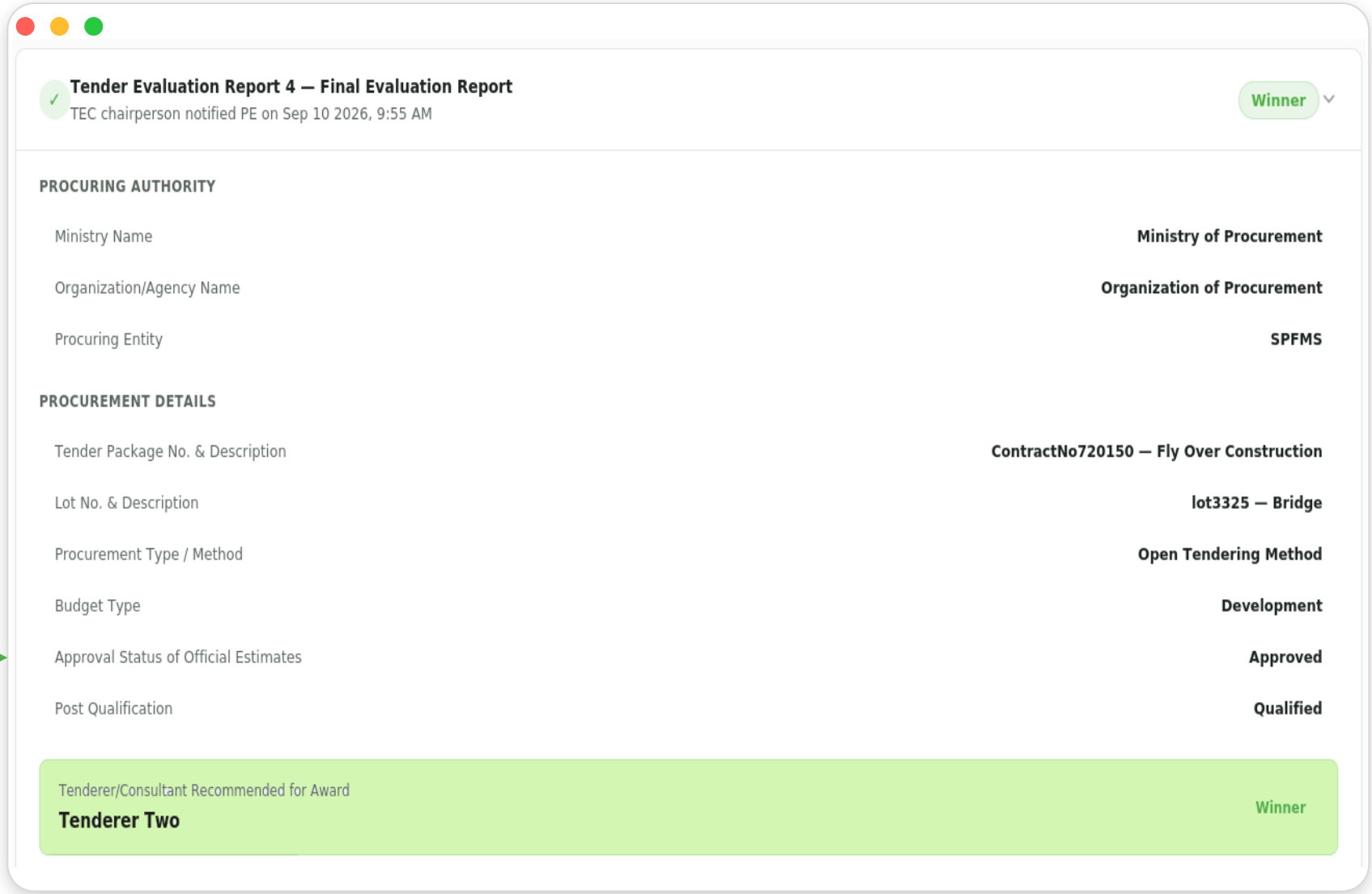
| Rank | Name of Tenderer | Official Est. Cost (BDT) | Quoted Amount (BDT) | Deviation | % Deviation |
|---|---|---|---|---|---|
| **1** | **Tenderer Two — Winner** | **40,000,000.000** | **40,850,000.000** | **850,000.000** | **2.125%** |
| 2 | Tenderer Four | 40,000,000.000 | 39,787,087.800 | 212,912.200 | 0.533% |
| 3 | Tenderer One | 40,000,000.000 | 41,720,500.000 | 1,720,500.000 | 4.301% |
| 4 | Tenderer Three | 40,000,000.000 | 42,695,340.750 | 2,695,340.750 | 6.738% |

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# Functional Overview: AI Based Evaluation Module

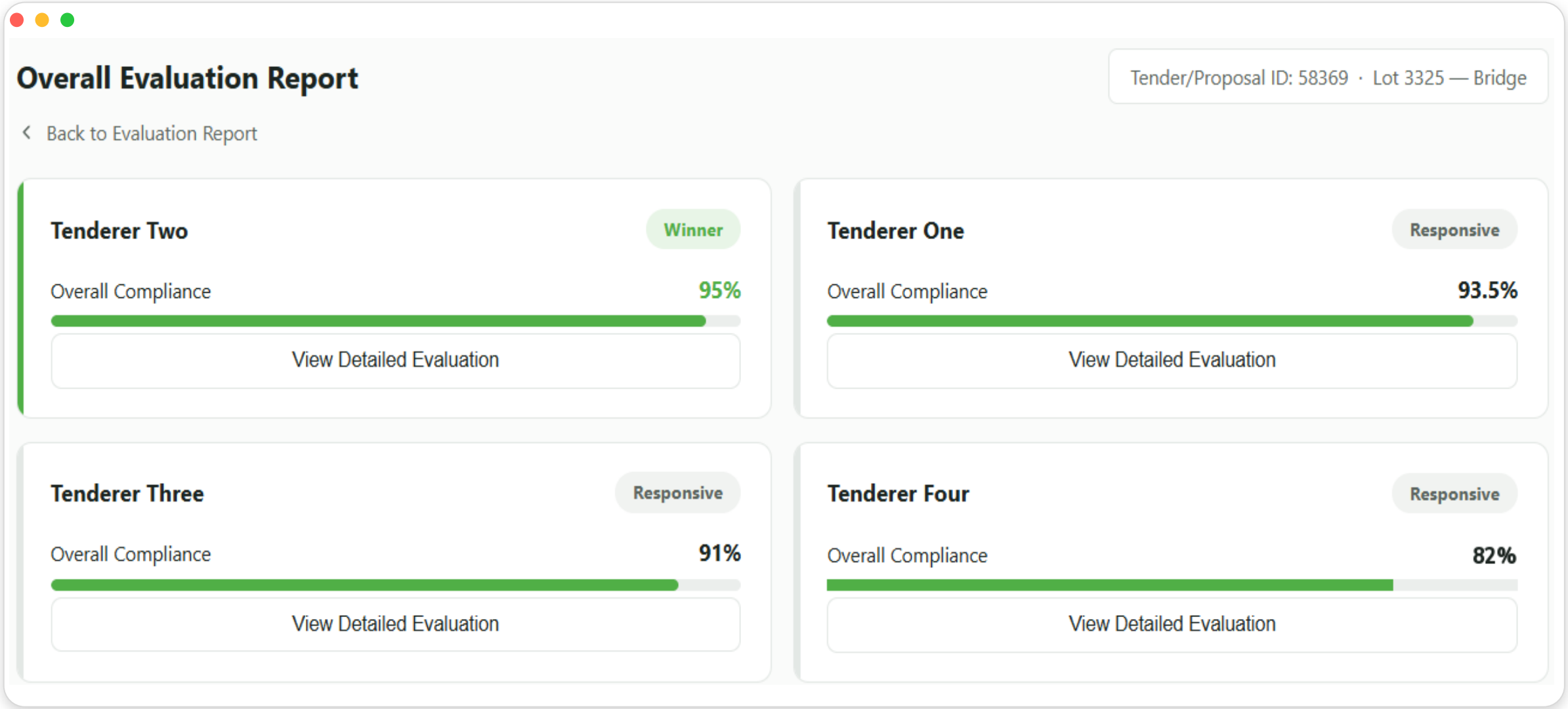
*Full interface overview*




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# Functional Overview: AI Based Evaluation Module




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# AI in e-CMS (Contract Management System): Automated Milestone Tracking, Performance Analytics & Risk Management

**AI in e-CMS**

01 **Automated Contract tracking and generate milestone**

Contract configuration and milestone generation

02 **Automated Progress & Milestone Tracking**

Real-time milestone tracking **against deliverables**

03 **Smart Invoice & Financial Oversight**

Automated invoice validation **against verified milestones and BOQ rates**

04 **Contract Amendment & Variation**

AI evaluation of scope changes **to prevent budget expansion**

05 **Automated SLA & KPI Monitoring**

Continuous SLA tracking and execution performance monitoring

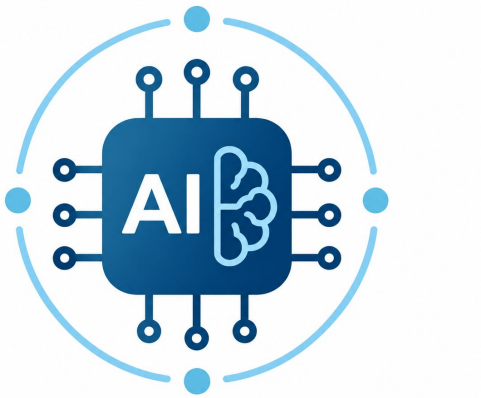
06 **Automated Delay & Risk Analysis**

**Predictive early-warning detection** for Schedule Delays and Process Obstacles

07 **PM-in-the-Loop for Administrative and Financial Approval**

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# AI Driven Helpdesk Support: Chatbot




1. **Regulatory Framework, Act and Rules Knowledge Engine**
   Automated reply of real-time queries against PPA and PPR

2. **Multilingual NLP Support**
   Understands the user's language and responds in the same language for clear and accessible assistance.

3. **Interactive Guided Workflows**
   **Automated Step-by-step interactive guidance** for registration, bidding, and payments

4. **Automated Real-Time Application Support**
   **Automated queries reply against real-time application data** through natural-language queries

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# AI Prediction: Fraud, Collusion & Anomaly

**Bidder Collusion & Ring Prediction**

AI analyzes bidding patterns and metadata to identify potential cartels and circular bidding behavior.

**Prediction Repetitive Bid-Winning Pattern**

AI predicts repeated wins by the same Bidder in similar bids, indicating potential estimate leakage, market concentration or pricing risks.

**Sanctions & Debarment Cross-Checks**

Instant automated screening against national blacklist and debarred registries

**Analyzes Red-Flag Price Anomaly Alerts**

AI analyzes real-time pricing data to **detect abnormal pricing, front-loading, and bid-rigging**

**Forensic Audit Trails & Oversight Dashboard**

AI helps oversight authorities to identify tamper-evident transaction logs and assess risk scores.



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