

ACADEMIC TRACK • CASE STUDIES

# AI Acquisition Case Studies

Four anonymized composite case studies showing the EFAIRA methodology applied to representative federal AI acquisitions. Designed for federal acquisition workforce training and contractor proposal staff development.

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## EFAIRA-CASE-STUDIES-V1

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## A. About these case studies

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The four case studies below are composite anonymized scenarios drawn from observed federal AI acquisition patterns. Each scenario represents a real combination of agency mission, capability type, and evaluation pattern but is not traceable to any specific contractor, agency, or award. The case studies are designed for use in federal acquisition workforce training, agency CIO education, and contractor proposal staff development.

## B. Case Study 1 — Civilian agency document classification at moderate impact

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### 1.1 The acquisition

A civilian agency was procuring an AI-driven document classification capability for a public-facing program. The capability would classify incoming documents into categories that drove downstream workflow routing. The agency designated the capability as moderate impact under OMB M-25-22.

### 1.2 The capability proposed

The contractor proposed a custom-trained classifier built on a foundation model from a major commercial provider, with a human-on-the-loop review checkpoint at the routing decision and full audit logging.

### 1.3 The EFAIRA findings

The capability scored well across most domains. Two areas surfaced as material:

- The foundation model provider relationship was identified but the contractor had not documented their supply chain illumination posture for the dependency.
- The drift detection methodology was strong but the threshold values for action were not documented in the proposal volume.

### 1.4 The remediation

The contractor added a supply chain illumination paragraph to the proposal volume and added specific drift threshold values with the cadence and action triggered. The Readiness Receipt was issued at green readiness across all eight domains.

### 1.5 The training takeaway

Strong technical work surfaced two documentation gaps that would have been visible to federal evaluators. The independent review caught both gaps before submission. Federal acquisition workforce trainers can use this case to illustrate the difference between substantive AI capability and proposal-ready documentation.

## C. Case Study 2 — Defense agency AI triage at higher impact

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### 2.1 The acquisition

A defense agency was procuring an AI-driven triage capability for incoming operational reports. The capability would prioritize human attention to the most time-sensitive items. The agency designated the capability as higher impact under applicable defense AI risk management direction.

### 2.2 The capability proposed

The contractor proposed an in-house developed triage model with explicit human-in-the-loop oversight at every triage output. Defense-grade authorization posture and CMMC compliance were already in place.

### 2.3 The EFAIRA findings

Three areas surfaced:

- The human-in-the-loop language was used in the proposal but the implementation was closer to human-on-the-loop with sample audit. The terminology did not match the operational reality.
- The bias screening methodology was described but the fairness metric was not named.
- The decommissioning criteria for the AI capability were not documented in the proposal volume.

### 2.4 The remediation

The contractor restructured the oversight description to use policy-accurate terminology and adjusted the proposal to clearly describe the actual oversight regime as human-on-the-loop with documented intervention criteria. The fairness metric was named and the bias screening results were summarized. Decommissioning criteria were added to the sustainment section.

### 2.5 The training takeaway

Defense AI proposals are evaluated against policy-accurate terminology. Using the wrong term, even when the underlying work is substantive, creates evaluation risk. This case illustrates the value of vocabulary precision in federal AI proposal volumes.

## D. Case Study 3 — Civilian decision support with affected population

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### 3.1 The acquisition

A civilian agency was procuring an AI decision support capability that influenced determinations affecting a defined population of beneficiaries. The agency designated the capability as higher impact under OMB M-25-22.

### 3.2 The capability proposed

The contractor proposed a custom-developed decision support model with full bias screening documentation, named fairness metrics, and a documented recourse pathway for affected individuals.

### 3.3 The EFAIRA findings

Two areas surfaced:

- The transparency artifact for end users met substantive content requirements but was delivered as an image-only PDF that did not satisfy Section 508 accessibility standards.
- The recourse pathway was documented but the timeline for recourse review was not stated.

### 3.4 The remediation

The transparency artifact was reissued as a Section 508 compliant document with full screen reader compatibility. The recourse pathway documentation was updated to include the review timeline and the escalation path for unresolved recourse requests.

### 3.5 The training takeaway

Federal AI transparency artifacts must satisfy Section 508 in addition to being substantively complete. Accessibility is not a separate problem from AI policy compliance; the two are evaluated together. This case is useful for training acquisition staff on the intersection of AI policy and accessibility law.

## E. Case Study 4 — Multi-agency AI capability with shared infrastructure

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### 4.1 The acquisition

A multi-agency AI capability that would be deployed in a shared infrastructure environment with multiple agency consumers. The capability was a generative AI model serving as a writing assistant for federal employees across multiple agencies.

### 4.2 The capability proposed

The contractor proposed a custom-deployed instance of a major foundation model, hosted in a FedRAMP-authorized environment, with per-agency data isolation and aggregated monitoring.

### 4.3 The EFAIRA findings

Three areas surfaced:

- The data provenance documentation covered the contractor's training data but did not address the foundation model's training data lineage.
- Per-agency monitoring boundaries were documented but the aggregated monitoring approach raised data isolation questions that the proposal did not address.

- The drift detection approach was sound for the aggregate capability but did not address per-agency drift surfacing.

#### 4.4 The remediation

The proposal was updated to document the foundation model provider's data provenance posture as a supply chain element and to address the per-agency data isolation boundaries explicitly. Per-agency drift surfacing was added to the monitoring section.

#### 4.5 The training takeaway

Shared infrastructure AI capabilities introduce evaluation considerations that single-agency capabilities do not face. This case illustrates the additional documentation burden on shared capabilities and is useful for training acquisition staff working on cross-agency AI procurements.

**Pattern across the four cases.** Every case study above involved sound underlying AI work. The findings were documentation completeness, terminology precision, and evaluation-surface alignment. Federal AI acquisition is increasingly an exercise in proposal-ready documentation, not raw technical capability. EFAIRA exists to surface the documentation gaps before federal evaluators surface them.

## F. Suggested instructional use

- **Acquisition workforce training.** Pair a case study with the EFAIRA Methodology Summary PDF and walk students through the findings, the remediation, and the policy basis for each finding.
- **Source selection panel orientation.** Use Case Study 2 to illustrate vocabulary precision expectations and Case Study 3 to illustrate the AI plus Section 508 intersection.
- **Contractor proposal staff onboarding.** Use Case Study 1 and Case Study 4 to illustrate the difference between strong technical work and proposal-ready technical work.
- **CIO and Chief AI Officer briefings.** Reference these cases as evidence of the systematic findings that an independent third-party assessment surfaces during the pre-submission window.

**Composite scenarios.** These case studies are composite anonymized scenarios drawn from observed federal AI acquisition patterns. They do not represent any specific contractor, agency, or award. Specific attribution to identifiable parties is not represented or implied.

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