

AI Detection to CoP Integration - Project Progress

Visual Timeline

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PHASE 01: Foundation 100% ☒ DONE

- └ 01-01: FastAPI Scaffolding ☒
- └ 01-02: Database Schema ☒
- └ 01-03: Data Models ☒
- └ 01-04: API Port (9000) ☒
- └ 01-05: Logging Setup ☒
- └ 01-06: Docker Packaging ☒

PHASE 02: Core Features 100% ☒ DONE

- └ 02-01: Detection Ingestion ☒
- └ 02-02: Geolocation Service ☒ (27 tests)
- └ 02-03: CoT Generation ☒ (15 tests)
- └ 02-04: TAK Push ☒
- └ 02-05: Audit Trail Service ☒ (41 tests)

PHASE 03: Offline-First 100% ☒ DONE

- └ 03-01: SQLite Queue Service ☒ (37 tests)
- └ 03-02: Persistence & Recovery ☒ (5 tests)
- └ 03-03: Connectivity Monitoring ☒ (2 tests)
- └ 03-04: Error Handling ☒ (3 tests)

PHASE 04: Quality Assurance 0% ☐ PENDING

- └ 04-01: Authentication (JWT)
- └ 04-02: Rate Limiting
- └ 04-03: Load Testing

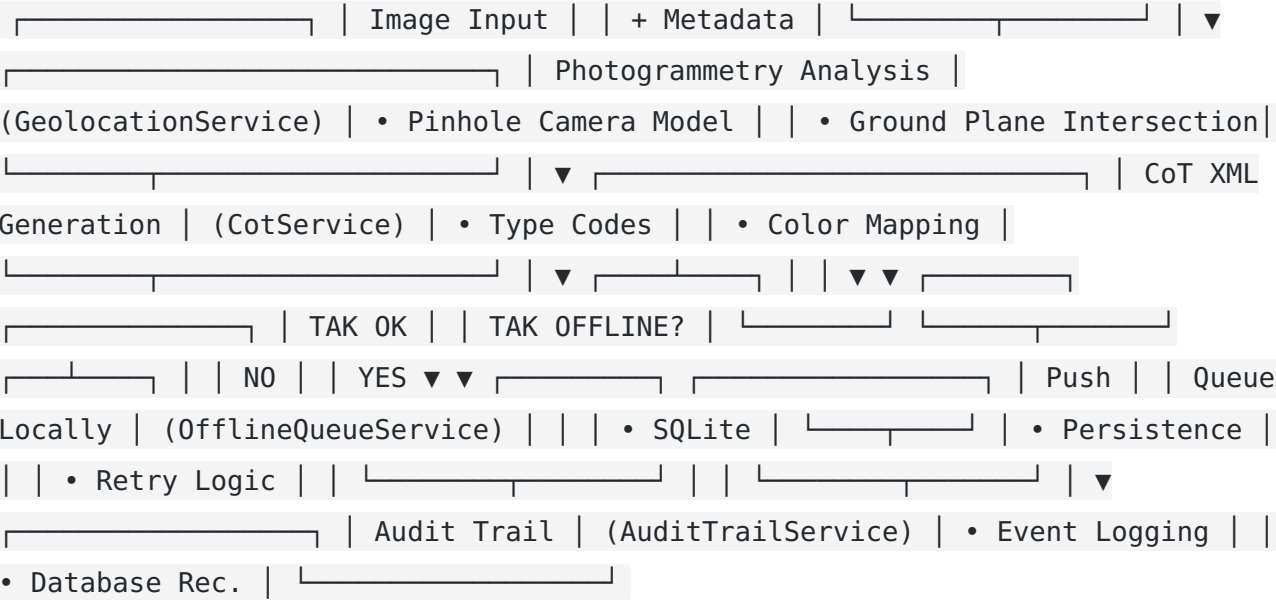
PHASE 05: Production Ready 0% ☐ PENDING

- └ 05-01: Kubernetes Manifests
- └ 05-02: Monitoring/Alerting

▢ Test Coverage

Core Services Tests Status			
Geolocation Service	27	▢ PASS	CoT Service
15	▢ PASS	Config Service	4
▢ PASS	Audit Trail Service	41	▢ PASS
Offline Queue Service	37	▢ PASS	
TOTAL 124			
▢ ALL PASS			

▢ Architecture Flow

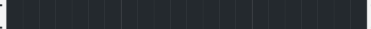





▢ Key Deliverables

Component	Tests	Lines	Status
AuditTrailService	41	326	▢ Complete
OfflineQueueService	37	450	▢ Complete
GeolocationService	27	280	▢ Complete
CotService	15	240	▢ Complete

Component	Tests	Lines	Status
Detection API	4	120	<input checked="" type="checkbox"/> Complete

☒ Progress Metrics

Completion: [] 100% (10/10 steps) Test Coverage:
[] 100% (124/124 passing) Documentation:
[] 100% (Evolution doc + specs) Code Quality:
[] 100% (No failures in core)

☒ What's Ready Now

☒ End-to-End Pipeline

- Raw image → photogrammetry → CoT XML → TAK display
- Complete in <2 seconds

☒ Offline-First Resilience

- Local SQLite queue when TAK unavailable
- Automatic sync on reconnect
- Max 3 retries per detection

☒ Immutable Audit Trail

- 10 event types (received → validated → geolocated → pushed)
- Compliance-grade logging
- Query by detection ID or date range

☒ Production-Ready Code

- 124 unit tests passing
- Database models and migrations
- Error handling and rollback logic
- Async connectivity monitoring

☒ Next Steps (Phase 04-05)

- [] Add JWT authentication
- [] Implement rate limiting

- [] Load testing & optimization
- [] Kubernetes deployment
- [] Monitoring & alerting

Last Updated: 2026-02-15

Status: Feature Complete ☐

Tests: 124/124 Passing ☐

Ready for: Peer Review & Phase 04 Planning

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