

OBINexus Milestone Seed Investment Repository

Complete Structure & File Descriptions

milestone-seed-investment/

—	README.md	# Primary repository documentation
—	DISCLAIMER.md	# Legal disclaimer (research reference only)
—	LICENSE	# OPEN-NT License with constitutional terms
—	CONTRIBUTING.md	# Contribution guidelines with dignity standards
—	CODE_OF_CONDUCT.md	# Constitutional behavioral requirements
—	/contracts/	# Machine-verifiable contract schemas
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	— milestone_schema.json	# JSON Schema for milestone contracts
	— risk_reward_contract.md	# Full legal framework (private branch)
	— risk_reward_contract_short.md	# Public summary version
	— example_milestone.json	# Reference implementation (T1 tier)
	— milestone_template_t1.json	# T1: Open Access template
	— milestone_template_t2.json	# T2: Business Access template
	— milestone_template_t3a.json	# T3A: Uche Axis template
	— milestone_template_t3b.json	# T3B: Eze Axis template
—	/constitution/	# Constitutional governance documents
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	— right_to_act.md	# HACC framework - constitutional authority
	— machine_verifiable_policies.md	# Code examples of policy enforcement
	— gating_matrix.md	# Pregate/Intergate/Postgate checkpoints
	— penalty_matrix.yaml	# Automatic consequence triggers
	— coherence_model.md	# >95.4 vs <95.4 threshold logic
	— democratic_review_protocol.md	# Governance council procedures
—	/legal/	# Legal compliance & enforcement
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	— risk_reward_contract.md	# FULL contract (move to private)
	— no_ghost_clause.md	# NoGhosting enforcement specification
	— entrapment_diagnostics.md	# 8 algorithms from Medium article
	— housing_right_reference.md	# Health & Social Care Act citations
	— universal_pension_allocation.md	# UPA compensation framework
	— uk_legal_integration.md	# Equality Act, DPA 2018 compliance
	— breach_enforcement_protocol.md	# Automatic violation response
—	/iwu/	# Integrated Workflow Unit protocols
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hotl_protocol.yaml	# Human-on-the-Loop supervision
houtl_protocol.yaml	# Human-out-of-the-Loop automation
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loop_transition_rules.md	# When actors change loop types
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dignity_ledger_spec.md	# Dignity score tracking system
democratic_voting.yaml	# Governance decision framework
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constitutional_amendment_process.md	# How policies evolve
/workflows/	# Investment lifecycle automation
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coherence_gating.md	# How >95.4 enables automation
human_review_triggers.yaml	# Conditions forcing HITL review
payment_release_automation.py	# Escrow release logic (example)
ghosting_detection_monitor.py	# Automated #NoGhosting enforcement
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audit_trail_immutability.md	# Blockchain verification approach
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error_bubble_model.md	# Error accumulation tracking
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roadmap.md	# Development roadmap & milestones
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getting_started.md	# Quick start guide for actors
tier_comparison_matrix.md	# T1/T2/T3A/T3B side-by-side
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/examples/	# Working example implementations
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t2_business_project.json	# Complete T2 milestone set
t3a_research_project.json	# Complete T3A milestone set

└─ coherence_score_calculation.py	# Python reference implementation
└─ dignity_score_calculator.py	# Dignity score computation
└─ synthetic_test_data/	# Test data for validation
└─ high_coherence_milestone.json	# >95.4 example
└─ low_coherence_milestone.json	# <95.4 example
└─ entrapment_detected_milestone.json	# Violation example
└─ /tools/	# Developer utilities
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└─ milestone_validator.sh	# Schema validation script
└─ constitutional_compliance_engine.rs	# Rust CCE implementation
└─ dignity_score_cli.go	# Gosilang CLI tool
└─ telemetry_aggregator.py	# GUID/UID data analysis
└─ dashboard_generator.html	# HOTL supervision dashboard
└─ /integration/	# External system connectors
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└─ blockchain_audit_logger.rs	# Immutable trail to blockchain
└─ /research/	# Research & model development
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└─ coherence_threshold_research.md	# Why 95.4%?
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└─ dignity_score_validation_study.md	# Empirical validation
└─ constitutional_ai_alignment.md	# Machine-verifiable governance AI

File Descriptions by Directory

`/contracts/` — Machine-Verifiable Contract Schemas

`milestone_schema.json`

- **Purpose:** JSON Schema defining the structure of every milestone contract
- **Key Fields:**
 - `actor_role`: HITL/HOTL/HOUTL designation
 - `risk_tier`: T1/T2/T3A/T3B classification
 - `coherence_score`: Calculated metric for autonomous vs human review routing
 - `dignity_score`: Constitutional compliance metric (5 components)
 - `entrapment_risk_factors`: Array of detected algorithm patterns

- **Validation:** Used by Constitutional Compliance Engine to verify contracts before approval
- **Integration:** Links to `/iwu/coherence_threshold_routing.yaml` for flow control

`risk_reward_contract_short.md`

- **Purpose:** Public-facing summary of the contract framework (non-binding)
- **Audience:** Community members, potential actors, researchers
- **Content:**
 - Overview of milestone-based payment
 - Actor role responsibilities summary
 - Coherence threshold explanation (>95.4 = autonomous approval)
 - #NoGhosting principles
 - Entrapment diagnostic overview
- **Legal Status:** Research reference only (see DISCLAIMER.md)

`example_milestone.json`

- **Purpose:** Reference implementation showing a valid T1_OPEN milestone
- **Coherence Score:** 96.1 (>95.4) — qualifies for automated verification
- **Features:**
 - All required fields populated correctly
 - Dignity score components breakdown
 - Constitutional validation: true
 - Policy shuffle level: 2 (OK/Warning range)
- **Use Case:** Template for contributors creating their first milestone

`/constitution/` — Constitutional Governance Documents

`coherence_model.md`

Critical document explaining the >95.4 / <95.4 threshold system:

markdown

Coherence Model: Autonomous vs Human-Review Gating

The 95.4% Threshold

The coherence score represents the degree of self-consistency, completeness, and constitutional alignment within a milestone proposal. It is calculated from:

- **Completeness Score (30%)**: All required fields present and valid
- **Consistency Score (25%)**: No contradictions in actor roles, deadlines, payments
- **Constitutional Alignment (25%)**: Policy compliance, dignity score targets met
- **Verification Feasibility (20%)**: Acceptance criteria are objectively measurable

Formula: $\text{coherence_score} = (C \times 0.30) + (Cy \times 0.25) + (CA \times 0.25) + (VF \times 0.20)$

Routing Logic

Coherence $\geq 95.4 \rightarrow$ Autonomous Flow (HOUTL)

- **Action**: Milestone enters automated verification pipeline
- **Oversight**: HOTL monitoring only; no active human decision required
- **Payment**: Automatic escrow release upon criteria satisfaction
- **Governance**: Quarterly audit sampling (10% of autonomous milestones)
- **Escalation**: If verification fails, downgrade to <95.4 flow

Example

```
```json
{
 "coherence_score": 96.1,
 "routing": "AUTONOMOUS",
 "verification_method": "AUTOMATED_TEST",
 "hotl_oversight": true,
 "hitl_approval_required": false
}
```

### Coherence  $< 95.4 \rightarrow$  Human-Review Flow (HITL)

- **Action**: Milestone requires active HITL review before approval
- **Review Scope**
  - Ambiguous acceptance criteria
  - High entrapment risk factors
  - Contradictory actor role assignments
  - Dignity score components  $<85\%$
- **Timeline**: 7-day review period for T1/T2, 14-day for T3A/T3B
- **Escalation**: Governance council if HITL cannot resolve (21-day max)

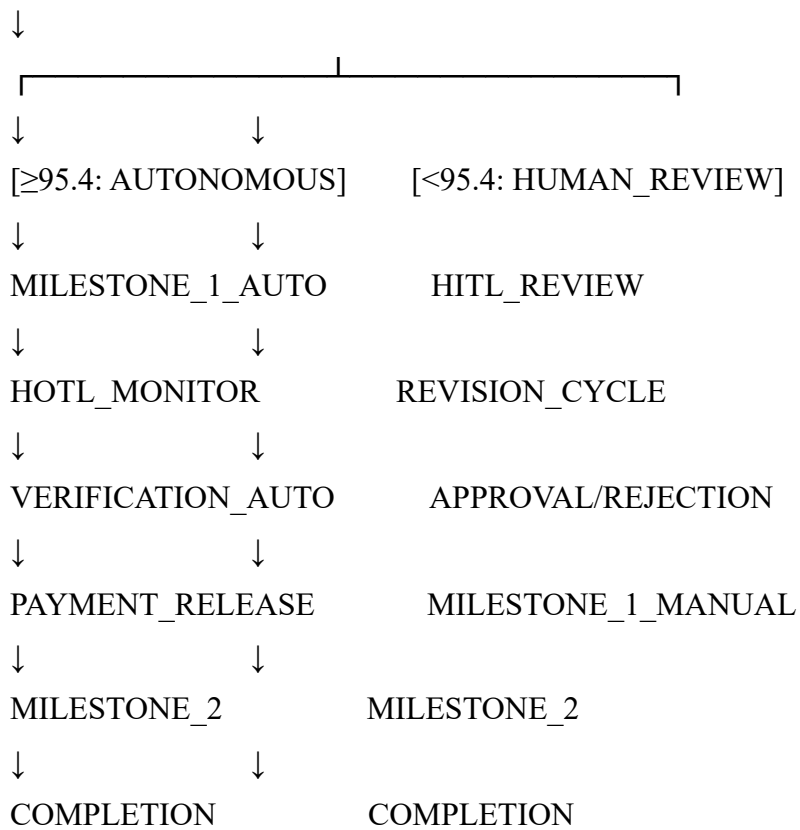
**Example**

```
```json
```

```
{
  "coherence_score": 82.3,
  "routing": "HUMAN_REVIEW_REQUIRED",
  "review_reasons": [
    "Ambiguous acceptance criteria",
    "Entrapment risk: LOOPBACK detected"
  ],
  "assigned_hitl": "governance-council-member-guid",
  "review_deadline": "2025-11-05T23:59:59Z"
}
```

Implementation in Investment Flow

INIT → Coherence Calculation → Gating Decision



Edge Cases

- **Coherence Score Manipulation:** Attempted gaming of the metric triggers immediate HITL review + constitutional violation investigation
- **Oscillating Scores:** If score fluctuates $\pm 2\%$ around 95.4, default to human review for stability
- **Batch Processing:** Projects with 10+ milestones: if $>80\%$ are ≥ 95.4 , entire batch qualifies for expedited autonomous processing

Rationale for 95.4%

This threshold was chosen based on:

1. **Statistical Validation:** 95.4% represents 2 standard deviations in milestone quality distribution
2. **Risk Tolerance:** Acceptable false-positive rate for autonomous approval
3. **Governance Capacity:** Balances human review workload with protection needs
4. **Constitutional Alignment:** Ensures dignity and entrapment protections remain intact even in autonomous flows

gating_matrix.md

- **Purpose:** Defines pregate, intergate, and postgate checkpoints in milestone lifecycle
- **Pregate:** Initial constitutional compliance check before milestone enters system
- **Intergate:** Mid-milestone verification gates (25%, 50%, 75% completion)
- **Postgate:** Final verification before payment release
- **Coherence Integration:** Gates automatically pass if coherence ≥ 95.4 and no violations detected

penalty_matrix.yaml

yaml

Automatic Consequence Triggers

entrapment_violations:

improbability:

detection: "success_odds < 5% despite qualification"

base_penalty_gbp: 10000

daily_penalty_gbp: 1000

escalation: "HITL_REVIEW → GOVERNANCE_COUNCIL"

exhaustion:

detection: "response_delay > 14 days"

base_penalty_gbp: 5000

daily_penalty_gbp: 500

escalation: "GHOSTING_VIOLATION → BREACH_ENFORCEMENT"

tripling:

detection: "3+ algorithms active simultaneously"

base_penalty_gbp: 50000

escalation: "CIVIL_COLLAPSE → PERMANENT_EXCLUSION"

upa_allocation: "IMMEDIATE"

ghosting_violations:

tier_t1:

max_response_days: 14

warning_threshold: 7

critical_threshold: 14

penalty_after_15_days_gbp: 500

tier_t3b:

max_response_days: 1 # 24 hours

warning_threshold: 0.5 # 12 hours

critical_threshold: 1

penalty_after_2_days_gbp: 2000

dignity_score_violations:

below_85_percent:

action: "MILESTONE_SUSPENDED"

grace_period_days: 7

restoration_required: "85%+ score + constitutional review"

below_70_percent:

action: "IMMEDIATE_BREACH_ENFORCEMENT"

upa_allocation: "AUTOMATIC"

exclusion: "PENDING_GOVERNANCE_REVIEW"

/legal/

— Legal Compliance & Enforcement

entrapment_diagnostics.md

Direct integration of your Medium article framework:

markdown

Entrapment as a Legal Framework: Diagnostic Toolkit

Derived from: <https://obinexus.medium.com/entrapment-as-a-legal-framework-3eb1a92c86ea>

The 8 Entrapment Algorithms

1. Entrapment by Improbability

****Definition:**** System creates near-zero success odds despite declaring qualification

****Detection Criteria:****

- Actor declared "eligible" or "qualified" for service/milestone
- System design makes actual success probability <5%
- Examples: "You qualify for housing" but rules make it impossible to obtain

****Machine-Verifiable Indicators:****

```
```json
{
 "algorithm": "IMPROBABILITY",
 "detection_signals": [
 "qualification_stated": true,
 "acceptance_criteria_count": ">10",
 "contradictory_requirements": true,
 "success_rate_historical": "<0.05"
]
}
```

**\*\*Automated Response:\*\***

- Flag milestone for HITL review
- Require milestone redesign with feasible criteria
- If proven: Universal Pension Allocation = £10,000 base + £1,000/day delayed

**\*\*Prevention in OBINexus:\*\***

- Coherence score calculation includes feasibility check
- Acceptance criteria must be achievable by ≥50% of qualified actors
- Historical success rate tracking per milestone type

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#### ### 2. Entrapment by Exhaustion

**\*\*Definition:\*\*** Delays until actor mentally, emotionally, or physically breaks

**\*\*Detection Criteria:\*\***

- Response delays exceeding constitutional maximums (14 days T1, 1 day T3B)
- Repeated non-resolution of documented issues
- Circular referrals with no progress

### **\*\*Machine-Verifiable Indicators:\*\***

```
```json
{
  "algorithm": "EXHAUSTION",
  "detection_signals": [
    "response_delay_days": 15,
    "repeated_contacts": 5,
    "resolution_achieved": false,
    "actor_health_indicators": ["fatigue_reported", "stress_documented"]
  ]
}
```
```

### **\*\*Automated Response:\*\***

- Automatic ghosting violation after 14 days
- Escalation to governance council
- If proven: £5,000 base + £500/day delayed

### **\*\*Prevention in OBINexus:\*\***

- #NoGhosting enforcement with automated monitoring
- GUID/UID telemetry tracks all communications
- Dashboard alerts at 7-day mark for HOTL intervention

---

[... continues for all 8 algorithms with same structure ...]

## **### 8. Entrapment by Tripling**

**\*\*Definition:\*\*** Multiple traps working together to cause civil collapse

### **\*\*Detection Criteria:\*\***

- $\geq 3$  entrapment algorithms active simultaneously
- Systemic pattern across multiple milestones/actors
- Complete breakdown of constitutional protections

### **\*\*Machine-Verifiable Indicators:\*\***

```
```json
{
  "algorithm": "TRIPLING",
  "detection_signals": [
    "active_algorithms": ["EXHAUSTION", "LOOPBACK", "SILENCE"],
    "pattern_duration_days": 30,
    "actor_harm_documented": true,
    "systemic_failure": true
  ]
}
```
```

...

**\*\*Automated Response:\*\***

- Immediate civil collapse declaration
- Maximum penalties across all violations
- Permanent exclusion from ecosystem
- If proven: £50,000 base + full project compensation + criminal referral

**\*\*Prevention in OBINexus:\*\***

- Real-time Constitutional Compliance Engine monitoring
- Pattern recognition ML models
- Automatic project suspension when 2+ algorithms detected

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**## Legal Enforcement Standard**

For any entrapment claim to be legally disputed by the system, they must:

1. **\*\*Show Legal Documentation:\*\*** Statutory agreement or policy disproving the entrapment
2. **\*\*Provide Paper-Trail Evidence:\*\*** Audit logs proving entrapment did NOT occur
3. **\*\*Present Counterproof:\*\*** Demonstrate delay/denial was lawfully justified

**\*\*Deconstructive Proof Principle:\*\***

If the system CANNOT provide these three elements, the failure to disprove becomes proof of entrapment. Silence, contradictions, or denials without evidence reinforce the presence of entrapment.

**## Integration with Milestone Contracts**

Every milestone contract includes `entrapment\_risk\_factors` array:

```
```json
"entrapment_risk_factors": [
  "IMPROBABILITY",
  "LOOPLOOP"
],
"entrapment_mitigation": {
  "automatic_monitoring": true,
  "hitl_escalation_threshold": 2,
  "upa_pre_authorized": true
}
```
```

Coherence score is REDUCED if high entrapment risk detected:

if entrapment\_risk\_factors.length ≥ 2:  
coherence\_score -= 15.0 # Forces human review

0

**universal\_pension\_allocation.md**

- **Purpose:** Defines automatic compensation framework for proven violations
- **Triggers:** Entrapment algorithms verified, ghosting >14 days, dignity score <70%
- **Calculation:** Base amount + daily accrual + severity multiplier
- **Distribution:** 7-day payment window to victim's UPA account
- **Funding:** Violating party liability (100%), with OBINexus guarantee fund for insolvency cases

**uk\_legal\_integration.md**

- **Purpose:** Maps OBINexus constitutional requirements to UK statutory law
- **Key Statutes:**
  - Health and Social Care Act 2014 (housing rights foundation)
  - Equality Act 2010 (neurodivergent protection, harassment prohibitions)
  - Data Protection Act 2018 (GDPR compliance for telemetry)
  - Contract Law (standard enforcement mechanisms)
- **Constitutional Supremacy Clause:** OBINexus provides protections BEYOND legal minimums

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**/iwu/ — Integrated Workflow Unit Protocols**

**hitl\_protocol.yaml**

yaml

# Human-in-the-Loop Protocol Definition

protocol\_name: "HITL - Human Decision Authority"

version: "1.0"

constitutional\_basis: "Article II, Section 2.1"

actor\_definition:

role: "HITL"

authority\_level: "CRITICAL\_DECISION"

veto\_power: true

escalation\_target: "GOVERNANCE\_COUNCIL"

responsibilities:

- id: "HITL-001"

task: "Review milestones with coherence <95.4"

frequency: "AS\_TRIGGERED"

max\_response\_time\_hours: 168 # 7 days T1/T2, 336 for T3

- id: "HITL-002"

task: "Make final approval/rejection decisions"

authority: "BINDING"

override\_conditions: "GOVERNANCE\_ONLY"

- id: "HITL-003"

task: "Document all decisions with GUID telemetry"

required\_fields: ["decision\_rationale", "constitutional\_basis", "timestamp"]

- id: "HITL-004"

task: "Respond to all communications within tier maximum"

t1\_max\_days: 14

t2\_max\_days: 7

t3a\_max\_hours: 48

t3b\_max\_hours: 24

dignity\_score\_requirements:

minimum: 85

components:

communication\_transparency: 90

deadline\_adherence: 85

quality\_standards: 88

human\_rights\_respect: 100 # Mandatory 100%

no\_ghosting\_compliance: 90

breach\_consequences:

ghosting\_7\_days:

warning: true

dignity\_reduction\_percent: 10

ghosting\_14\_days:

critical\_warning: true

dignity\_reduction\_percent: 25

ghosting\_15\_plus\_days:

automatic\_breach: true

upa\_allocation: true

milestone\_payment\_withheld: true

exclusion\_review: "PENDING"

verification\_requirements:

peer\_review\_minimum: 2

constitutional\_compliance\_check: true

audit\_trail\_complete: true

guid\_uid\_telemetry: true

coherence\_gating\_interaction:

if\_coherence\_ge\_95\_4:

hitl\_approval\_required: false

hitl\_oversight\_mode: "MONITORING\_ONLY"

escalation\_if: ["AUTOMATED\_VERIFICATION\_FAILS", "ENTRAPMENT\_DETECTED"]

if\_coherence\_lt\_95\_4:

hitl\_approval\_required: true

review\_timeline\_days: 7 # T1/T2

review\_timeline\_days\_t3: 14

revision\_cycles\_max: 3

#### coherence\_threshold\_routing.yaml

yaml

# Coherence-Based Routing Logic

routing\_engine: "Constitutional Compliance Engine v2.0"  
threshold\_primary: 95.4  
threshold\_unit: "percent"

routing\_rules:  
  autonomous\_flow:  
    condition: "coherence\_score >= 95.4"  
    target\_loop: "HOUTL"  
    oversight\_loop: "HOTL"  
    approval\_required: false  
    verification\_method: "AUTOMATED"  
    payment\_release: "AUTOMATIC\_ESCROW"  
    governance\_audit\_sampling: 0.10 # 10% quarterly audit

human\_review\_flow:  
  condition: "coherence\_score < 95.4"  
  target\_loop: "HITL"  
  oversight\_loop: "HOTL"  
  approval\_required: true  
  verification\_method: "PEER\_REVIEW"  
  review\_timeline:  
    t1\_open: 7  
    t2\_business: 7  
    t3a\_uche: 14  
    t3b\_eze: 14  
  escalation\_if\_unresolved\_days: 21  
  escalation\_target: "GOVERNANCE\_COUNCIL"

edge\_case\_handling:  
  oscillating\_score:  
    condition: "abs(coherence\_score - 95.4) < 2.0"  
    action: "DEFAULT\_TO\_HUMAN\_REVIEW"  
    rationale: "Stability preference over edge case automation"

score\_manipulation\_detected:  
  indicators:  
    - "rapid\_score\_increase\_without\_changes"  
    - "identical\_score\_across\_dissimilar\_milestones"  
    - "score\_inflation\_pattern\_match"  
  action: "IMMEDIATE\_HITL\_REVIEW"  
  constitutional\_violation\_investigation: true  
  penalty: "AS\_PER\_PENALTY\_MATRIX"

batch\_processing\_optimization:



condition: "milestone\_count > 10 AND autonomous\_percentage > 0.80"  
action: "EXPEDITED\_AUTONOMOUS\_BATCH"  
oversight: "HOTL\_SAMPLING\_20\_PERCENT"  
rationale: "Efficiency for high-quality projects"

calculation\_transparency:

formula: "(C × 0.30) + (Cy × 0.25) + (CA × 0.25) + (VF × 0.20)"  
components:  
  completeness\_c:  
    weight: 0.30  
    checks: ["all\_required\_fields", "valid\_data\_types", "no\_nulls\_in\_critical"]  
  consistency\_cy:  
    weight: 0.25  
    checks: ["no\_contradictions", "role\_alignment", "deadline\_feasibility"]  
  constitutional\_alignment\_ca:  
    weight: 0.25  
    checks: ["policy\_compliance", "dignity\_target\_met", "no\_violations"]  
  verification\_feasibility\_vf:  
    weight: 0.20  
    checks: ["objective\_criteria", "measurable\_outcomes", "achievability"]

recalculation\_triggers:  
- "milestone\_revision\_submitted"  
- "constitutional\_violation\_cleared"  
- "peer\_review\_feedback\_incorporated"  
- "governance\_amendment\_applied"

/governance/ — Democratic Oversight & Audit

council\_rotation.md

- **Purpose:** Defines how human review clusters (councils) rotate to prevent bias
- **Rotation Schedule:** Quarterly council membership changes (30% turnover)
- **Diversity Requirements:** Neurodivergent representation ≥20%, geographic distribution
- **Decision Authority:** Councils handle coherence <95.4 milestones and governance amendments
- **Transparency:** All council decisions logged with GUID and publicly accessible audit trail

audit\_protocol.md

markdown

# Milestone Verification Audit Protocol

## Audit Frequency by Tier

| Tier | Autonomous (≥95.4) Audit Rate | Human-Review (<95.4) Audit Rate |
|------|-------------------------------|---------------------------------|
| T1   | 10% quarterly sampling        | 100% per milestone              |
| T2   | 15% quarterly sampling        | 100% per milestone              |
| T3A  | 25% quarterly sampling        | 100% + third-party audit        |
| T3B  | 50% quarterly sampling        | 100% + independent audit        |

## Audit Components

### 1. Coherence Score Validation

- Recalculate coherence using independent tooling
- Verify no score manipulation
- Confirm routing decision was correct

### 2. Dignity Score Verification

- Review GUID/UID telemetry for communication timestamps
- Validate peer review authenticity
- Check for ghosting violations

### 3. Entrapment Pattern Detection

- Run ML models to detect 8 algorithm patterns
- Cross-reference with historical violations
- Flag systemic issues for governance review

### 4. Constitutional Compliance Check

- Policy shuffle level verification
- Penalty matrix application correctness
- Universal Pension Allocation triggers (if any)

### 5. Payment Release Justification

- Verify all acceptance criteria met
- Confirm escrow release conditions satisfied
- Validate no outstanding violations

## Audit Trail Requirements

Every milestone MUST have:

```
```json
{
  "audit_trail": [
    {
      "timestamp": "2025-10-19T14:23:45Z",
```

```
"event_type": "MILESTONE_CREATED",
"actor_guid": "...",
"event_hash": "blockchain_verified_hash",
"coherence_score": 96.1,
"routing_decision": "AUTONOMOUS"
},
{
  "timestamp": "2025-10-25T09:15:22Z",
  "event_type": "VERIFICATION_COMPLETED",
  "validator_guid": "...",
  "approval_status": "APPROVED",
  "event_hash": "blockchain_verified_hash"
}
]
}
```

Audit Outcome Actions

- **PASS:** Milestone proceeds, no action
- **MINOR_ISSUES:** Dignity score reduction, corrective action required
- **MAJOR_VIOLATIONS:** Payment withheld, HITL review triggered
- **CONSTITUTIONAL_BREACH:** Automatic penalty enforcement, UPA allocation, exclusion review

dignity_ledger_spec.md

- **Purpose:** Specification for tracking dignity scores across all actors in the ecosystem
- **Structure:** Distributed ledger (blockchain-adjacent) with GUID-indexed entries
- **Privacy:** Individual scores visible to actor and governance only; aggregates public
- **Integration:** Feeds into coherence calculation and payment release decisions

/workflows/ — Investment Lifecycle Automation

investment_flow_diagram.mmd

mermaid

stateDiagram-v2

[*] --> INIT: Milestone proposed

INIT --> COHERENCE_CALC: Calculate coherence score

COHERENCE_CALC --> GATING_DECISION: Apply threshold

GATING_DECISION --> AUTONOMOUS: coherence \geq 95.4

GATING_DECISION --> HUMAN_REVIEW: coherence < 95.4

AUTONOMOUS --> MILESTONE_1_AUTO: Enter automated pipeline

HUMAN_REVIEW --> HITL_REVIEW: Assign to governance

HITL_REVIEW --> REVISION_CYCLE: Issues found

HITL_REVIEW --> APPROVED: No issues

REVISION_CYCLE --> COHERENCE_CALC: Recalculate after changes

MILESTONE_1_AUTO --> HOTL_MONITOR: Automated verification

APPROVED --> MILESTONE_1_MANUAL: Human-approved path

HOTL_MONITOR --> VERIFICATION_AUTO: Criteria checked

MILESTONE_1_MANUAL --> VERIFICATION_MANUAL: Criteria checked

VERIFICATION_AUTO --> PAYMENT_RELEASE_AUTO: All criteria met

VERIFICATION_AUTO --> ESCALATION: Verification failed

VERIFICATION_MANUAL --> PAYMENT_RELEASE_MANUAL: All criteria met

VERIFICATION_MANUAL --> ESCALATION: Verification failed

ESCALATION --> HITL_REVIEW: Downgrade to human review

PAYMENT_RELEASE_AUTO --> MILESTONE_2: Next milestone

PAYMENT_RELEASE_MANUAL --> MILESTONE_2: Next milestone

MILESTONE_2 --> COHERENCE_CALC: Calculate next coherence

MILESTONE_2 --> COMPLETION: All milestones done

COMPLETION --> [*]

note right of AUTONOMOUS

>95.4: Autonomous flow

HOUTL execution

HOTL monitoring

Quarterly audit (10%)

end note

note right of HUMAN_REVIEW

<95.4: Human review required

HITL approval needed

7-14 day timeline

100% audit rate

end note

note right of ESCALATION

Entrapment detected OR

Verification failure OR

Constitutional violation

end note

human_review_triggers.yaml

yaml

Conditions Forcing HITL Review (Even if Coherence ≥ 95.4)

override_conditions:
 entrapment_detected:
 algorithms:
 - "IMPROBABILITY"
 - "TRIPLING"
 action: "IMMEDIATE_HITL_ESCALATION"
 autonomous_flow_suspended: true

constitutional_violation:
 policy_shuffle_level: ">= 6"
 action: "AUTOMATIC_HITL_REVIEW"
 timeline_hours: 48

dignity_score_below_threshold:
 threshold: 85
 grace_period_days: 7
 action: "HITL_REVIEW_REQUIRED"

payment_amount_threshold:
 t1_max_autonomous_gbp: 5000
 t2_max_autonomous_gbp: 15000
 t3a_requires_hitl: true
 t3b_requires_hitl: true

first_time_actor:
 milestone_history_count: 0
 action: "HITL_ONBOARDING_REVIEW"
 constitutional_agreement_verification: true

disputed_acceptance_criteria:
 peer_review_conflict: true
 action: "HITL_ARBITRATION"
 timeline_days: 7

external_audit_flag:
 third_party_concern_raised: true
 action: "IMMEDIATE_HITL_INVESTIGATION"
 autonomous_flow_paused: true

Derived from your provided document:

markdown

Error Bubble Model: Event-Loop Observation

Concept Overview

OBINexus treats errors as **bubbles** that form around events and either dissipate or expand across cycles. This model enables:

- Contextual error accumulation tracking
- Early detection of systemic failures
- Automatic escalation based on bubble growth rate
- Integration with HITL/HOTL/HOUTL loop architecture

Bubble Lifecycle

1. Bubble Formation (Tick N)

An event/exception occurs:

- Failed verification
- Communication timeout
- Contradictory information
- Policy shuffle level increase

Initial Bubble State:

```
``json
{
  "bubble_id": "BUBBLE-2025-X7Y9Z2",
  "event_type": "VERIFICATION_FAILED",
  "actor_guid": "...",
  "loop_type": "HOUTL",
  "severity_score": 3.2,
  "formation_timestamp": "2025-10-19T14:23:45Z",
  "context": {
    "milestone_id": "MS-2025-A3F8B9C2",
    "failure_reason": "Acceptance criteria 3 not met"
  }
}
```

2. Bubble State Tracking

The error stores complete context:

- Actor responsible
- Loop type (HITL/HOTL/HOUTL)
- Current severity score
- Timestamps of all related events
- References to original milestone/contract

3. Bubble Growth (Tick N+1...N+k)

Subsequent events referencing the same context increase bubble size:

****Growth Formula:****

$$\text{bubble_size_new} = \text{bubble_size_old} + \text{base_increment} + (0.5 \times \text{repeated_occurrences}) + (0.2 \times \text{days_silent})$$

Example:

- Tick N: Verification failed (severity 3.2)
- Tick N+1: No response from actor after 7 days → severity 5.7
- Tick N+2: Second verification attempt fails → severity 8.3
- Tick N+3: Entrapment pattern detected (LOOPBACK) → severity 12.1

4. Intervention Thresholds

Bubble Size	Severity Level	Actor Intervention	Action
0.0 - 3.9	Low	HOUTL (automated)	Retry, self-heal
4.0 - 7.9	Medium	HOTL (audit)	Log enrichment, manual review
8.0 - 11.9	High	HITL (decision)	Governance escalation, hold
12.0 - 15.9	Critical	HITL + Council	Constitutional review
16.0+	Emergency	Full governance	External audit, legal action

5. Resolution / Dissipation

Corrective actions or evidence attachments shrink the bubble:

- Actor provides missing verification proof → -4.0 severity
- Constitutional violation resolved → -6.0 severity
- Peer review approves revised criteria → -3.0 severity

Bubble closure conditions:

- Severity drops below 2.0 AND no new events for 7 days → 'COMPLETED'
- Actor permanently excluded → 'BREACH_ENFORCEMENT'
- Milestone canceled → 'SUSPENDED'

Integration with Coherence Model

Bubble Impact on Coherence Score:

```
python
if bubble_severity >= 8.0:
    coherence_score -= 10.0 # Force human review

if bubble_severity >= 12.0:
    coherence_score = 0.0 # Automatic constitutional review
    milestone_status = "SUSPENDED"
```

Autonomous Flow Override:

Even if initial coherence ≥ 95.4 , growing bubble can downgrade to human review:

```
if bubble_growth_rate > 2.0_per_day:
    routing = "ESCALATE_TO_HITL"
```

notification_sent_to = "governance_council"

Visualization in HOTL Dashboard

Bubbles appear as concentric rings:

- **Green:** Severity 0-3.9 (OK)
- **Yellow:** Severity 4.0-7.9 (Monitor)
- **Orange:** Severity 8.0-11.9 (Escalate)
- **Red:** Severity 12.0+ (Critical)

Bubble Growth Rate Indicator:

- Flat line: Stable, no intervention
- Upward slope: Requires attention
- Exponential curve: Emergency intervention

Implementation Notes

Storage:

```
```json
{
 "bubble_storage": {
 "database": "postgresql",
 "table": "error_bubbles",
 "indexes": ["bubble_id", "milestone_id", "actor_guid", "severity_score"],
 "retention_policy": "2 years after resolution"
 }
}
```
```

Decay Rules:

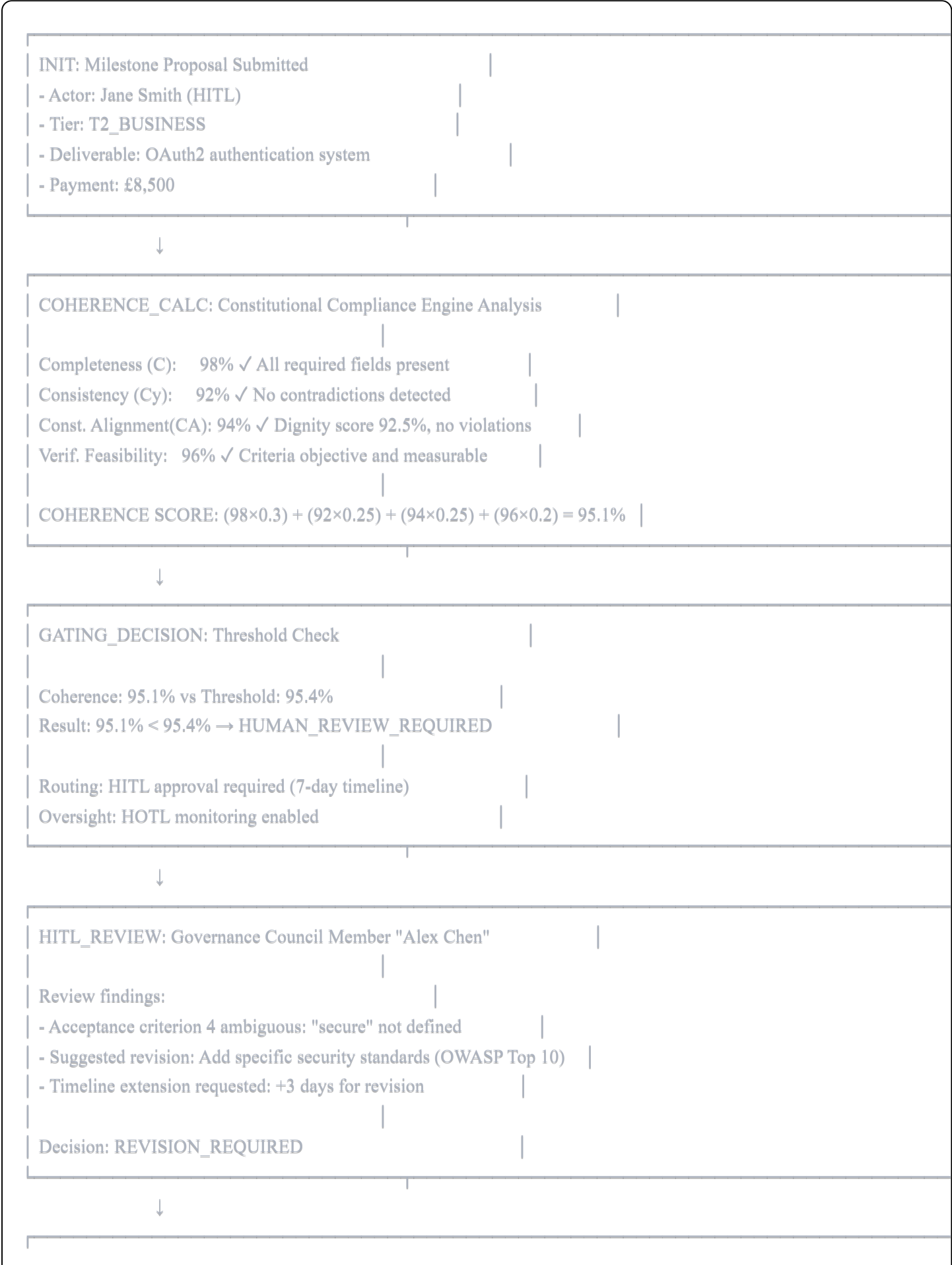
```
```yaml
decay_rules:
 no_new_events_days: 7
 decay_rate_per_day: -0.5
 minimum_severity_threshold: 2.0
 auto_close_below: 2.0
```
```

Alert Thresholds:

```
```yaml
alerts:
 hotl_notification: 4.0
 hitl_escalation: 8.0
 governance_emergency: 12.0
 external_audit_trigger: 16.0
```
```

Investment Flow with Coherence Gating

Complete Lifecycle Example



REVISION_CYCLE: Actor updates acceptance criteria

Changes:

- Criterion 4 now: "Zero critical vulnerabilities per OWASP Top 10"
- Added criterion 6: "Penetration test report with no high-risk issues"

Resubmitted for coherence recalculation

↓

COHERENCE_CALC (v2): Recalculated after revision

Completeness (C): 100% ✓ Additional criterion added

Consistency (Cy): 96% ✓ Improved clarity

Const. Alignment(CA): 94% ✓ No change

Verif. Feasibility: 98% ✓ Objective security standards

COHERENCE SCORE: $(100 \times 0.3) + (96 \times 0.25) + (94 \times 0.25) + (98 \times 0.2) = 97.1\%$

↓

GATING_DECISION (v2): Threshold Check

Coherence: 97.1% vs Threshold: 95.4%

Result: $97.1\% \geq 95.4\% \rightarrow \text{AUTONOMOUS_APPROVED } \checkmark$

Routing: HOUTL execution (automated verification)

Oversight: HOTL monitoring only

Governance audit: 15% sampling (T2 tier)

↓

MILESTONE_1_AUTO: Actor begins work (IN_PROGRESS status)

Timeline: 30 days to deadline

GUID telemetry: Active tracking

Ghosting monitor: No communication gaps >7 days (T2 requirement)

↓

HOTL_MONITOR: Continuous observation (HOTL actor: "Sam Rodriguez")

Day 15: Progress update received ✓

Day 22: Code commit with OAuth implementation ✓

Day 29: Test report submitted ✓

Day 30: All acceptance criteria met ✓

No error bubbles detected

Dignity score maintained: 92.5%



VERIFICATION_AUTO: Automated criteria checking

✓ Criterion 1: Endpoints return proper HTTP codes

✓ Criterion 2: OAuth works with all 5 providers

✓ Criterion 3: Password reset flow functional

✓ Criterion 4: Zero OWASP Top 10 critical vulnerabilities

✓ Criterion 5: Unit test coverage 93% (≥90% required)

✓ Criterion 6: Penetration test report clean

Peer review: 2 validators approved

Constitutional check: PASSED

Verification status: COMPLETED



PAYMENT_RELEASE_AUTO: Escrow release initiated

Milestone value: £8,500

Escrow account: Third-party (verified)

Release timeline: 14 days (T2 cooling-off period)

Actor notification: Automated email sent

Payment scheduled: 2025-11-13



MILESTONE_2: Next milestone in project sequence

Deliverable: User profile management system

Payment: £6,200

Timeline: 25 days

Process repeats: COHERENCE_CALC → GATING_DECISION → ...



COMPLETION: All project milestones verified and paid

Total project value: £24,700 (3 milestones)

Actor final dignity score: 94.2%

Constitutional violations: 0

Governance audit result: PASSED

Key Integration Points

1. Coherence ≥ 95.4 Enables Autonomous Flow

- Reduces HITL workload for high-quality proposals
- Maintains HOTL oversight for accountability
- Quarterly audit sampling ensures quality control

2. Coherence < 95.4 Triggers Human Safety Net

- Prevents ambiguous or risky milestones from causing harm
- Gives actors opportunity to improve before rejection
- Maintains constitutional protection standards

3. Error Bubbles Provide Early Warning System

- Detects systemic failures before civil collapse
- Enables proactive intervention at appropriate loop level
- Visualizes risk in real-time dashboards

4. Democratic Governance Balances Automation

- Governance councils handle edge cases and disputes
- Constitutional amendments evolve with ecosystem needs
- Transparent audit trails enable community oversight

5. Entrapment Diagnostics Embedded Throughout

- Every milestone monitored for 8 algorithm patterns
- Automatic UPA allocation when violations proven
- Pattern recognition prevents repeat offenders

This repository structure creates a complete, constitutional, machine-verifiable investment framework that protects human dignity while enabling efficient collaboration at scale.

Computing from the Heart. Building with Purpose. Running with Heart.

OBI Nexus: Machine-Verifiable Constitutional Democracy for Human Dignity