

IVYAR Protection from Delays

IVYAR — Protection from Delays

Institutional Transparency & Legal Integrity Module

Official Brief for Donors, Government Partners & Institutional Stakeholders

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IVYAR Platform Institutional Architecture & Governance Lake Stevens, Washington, USA

Document Specifications

PDF Layout Guidelines

| Element | Specification |
|--------------|--|
| Page Size | US Letter (8.5” × 11”) or A4 |
| Margins | Top: 1”, Bottom: 1”, Left: 0.9”, Right: 0.9” |
| Grid | 12-column, 24px gutter |
| Page Numbers | Bottom right, starting page 2 |

Typography

| Element | Font | Size | Weight |
|--------------|--------------------|---------|----------|
| H1 (Title) | Inter / Montserrat | 32–40pt | Bold |
| H2 (Section) | Inter / Montserrat | 22–26pt | Semibold |

| | | | |
|-----------------|-------------------------|---------|---------|
| H3 (Subsection) | Inter | 16–18pt | Medium |
| Body | Inter / Source Sans Pro | 11–12pt | Regular |
| Caption | Inter | 9pt | Regular |
| Code/Technical | JetBrains Mono | 10pt | Regular |

Color Palette

| Color | Hex | Usage |
|--------------------|---------|-------------------------|
| IVYAR Blue | #1A4B84 | Headers, accents, links |
| Dark Navy | #0D1B2A | Primary text |
| Institutional Gray | #F2F4F7 | Backgrounds, callouts |
| Light Gray | #E0E6ED | Borders, dividers |
| Accent Gold | #C9A227 | Highlights (optional) |
| Success Green | #10B981 | Positive indicators |
| Warning Orange | #F59E0B | Caution indicators |
| Alert Red | #EF4444 | Critical indicators |

Cover Page

[IVYAR LOGO]

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Institutional Transparency & Legal Integrity Module

Prepared for:
[Recipient Organization Name]

January 2026

IVYAR Platform
Institutional Architecture & Governance
Lake Stevens, Washington, USA
www.ivyar.org

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1. Executive Summary

Purpose

IVYAR Protection from Delays is an institutional module designed to eliminate harmful delays in claims processing, enforce accountability, and protect workers, employers, and vulnerable populations through automated SLA monitoring, immutable legal timelines, and transparent reporting.

The Challenge

Workers’ compensation and insurance claims often stall for months or years due to: - Lack of deadline enforcement - No visibility into case status - Missing accountability mechanisms - Inadequate evidence for legal proceedings - Systemic opacity benefiting non-compliant actors

The Solution

IVYAR introduces a comprehensive system that:

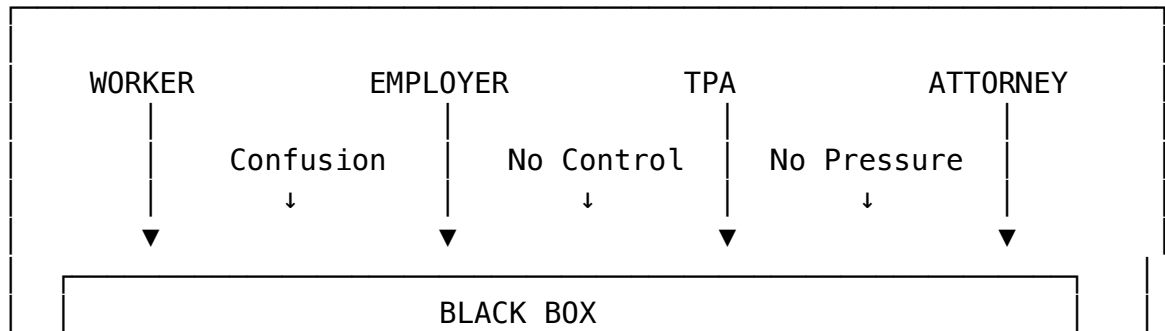
| Capability | Outcome |
|--------------------------|------------------------------------|
| Automatic SLA Monitoring | Every deadline is tracked |
| Delay Detection | Breaches are identified instantly |
| Immutable Timeline | Every event becomes legal evidence |
| Hash Chain Integrity | Data cannot be tampered with |
| Automated Reports | Evidence generated automatically |
| Stakeholder Dashboards | Transparency for all parties |

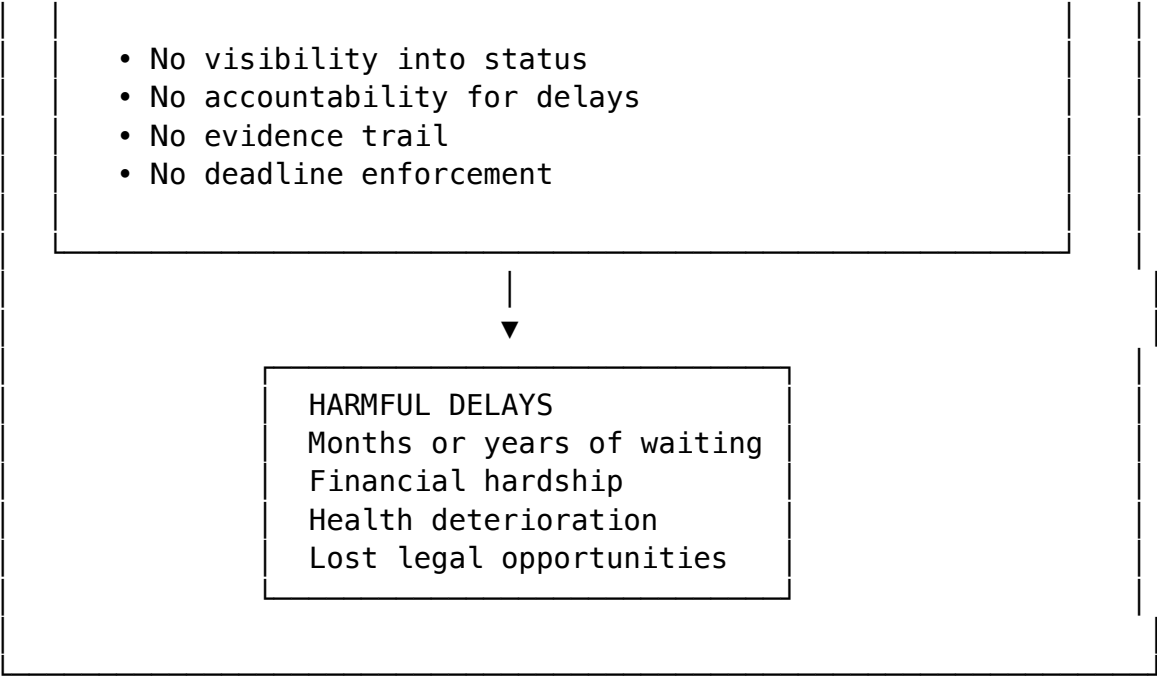
Key Metrics

| Metric | Target |
|-----------------------|------------------|
| SLA Compliance Rate | >85% |
| Average Response Time | <5 business days |
| Critical Delay Rate | <5% |
| Timeline Integrity | 100% verified |

2. The Problem

Current State of Claims Processing





Impact Statistics

CALLOUT BOX

- Average workers’ comp claim takes **6-18 months** to resolve
- **30%** of claims experience significant delays
- Delayed claims cost employers **2.5x more** than timely ones
- Workers lose an average of **\$12,000** in wages during delays
- **78%** of delayed claims lack proper documentation

Who Is Affected

| Stakeholder | Impact |
|-------------------|--|
| Workers | Financial hardship, health deterioration, stress |
| Employers | Lost productivity, increased costs, legal exposure |
| Attorneys | Wasted time gathering evidence manually |
| TPAs | Reputation damage, regulatory scrutiny |
| Government | Inability to identify systemic issues |

Root Causes

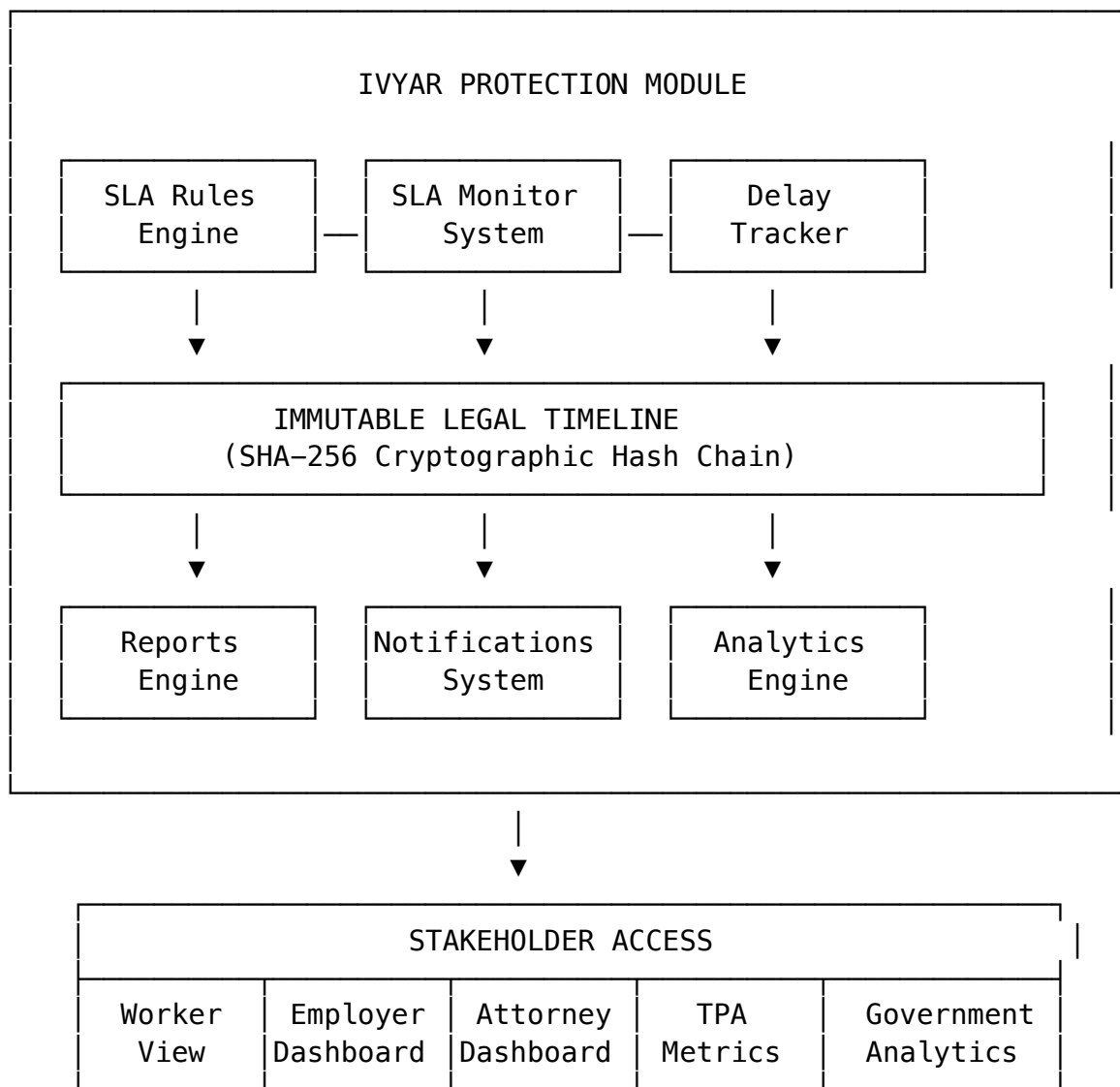
1. **No Standardized Deadlines** — SLAs are informal or unenforced
2. **No Visibility** — Stakeholders cannot see case status
3. **No Accountability** — Delays go unrecorded and unpunished
4. **No Evidence** — Proving delays requires manual reconstruction

5. No Analytics — Systemic problems remain hidden

3. The Solution

IVYAR Protection from Delays

IVYAR transforms claims processing from an opaque, unaccountable system into a transparent, evidence-based process.



Core Capabilities

1. SLA Rules & Instances

- Formalized deadlines for all actors
- Automatic timer start on events
- Configurable tolerance periods
- Warning notifications before breach

2. Automatic Delay Detection

- Real-time breach monitoring (every 15 minutes)
- Severity classification: Minor (1-4 days), Major (5-9 days), Critical (10+ days)
- Automatic delay event creation
- Escalation triggers

3. Immutable Legal Timeline

- Every event recorded permanently
- No modification or deletion possible
- Complete audit trail
- Court-admissible evidence

4. Cryptographic Hash Chain

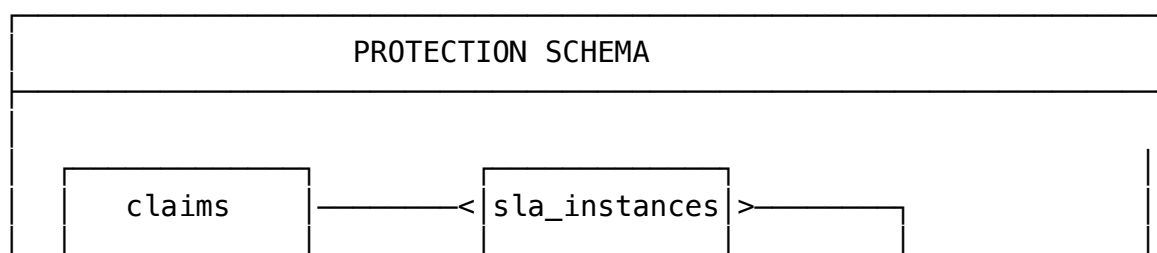
- Each event contains previous_hash + hash
- SHA-256 encryption
- Blockchain-style integrity verification
- Tamper detection

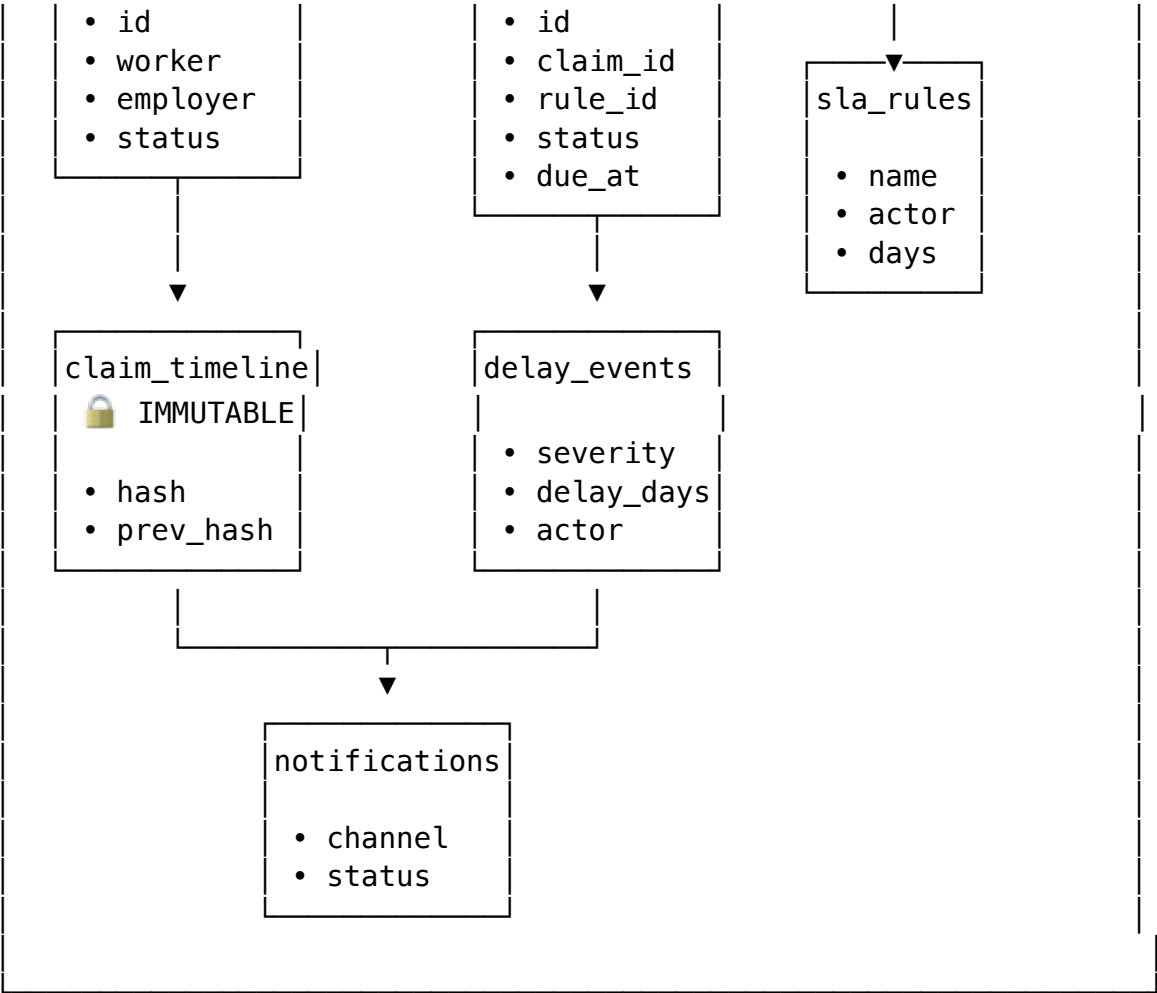
5. Automated Reports

- **Delay Report:** All delays, responsible parties, durations
- **Case Summary:** Complete legal timeline
- **Behavior Report:** Actor performance analytics

4. System Architecture

Database Schema





Core Tables

| Table | Purpose | Records |
|----------------------|-----------------------------------|------------------------------------|
| claims | Reference registry for all claims | Worker, employer, attorney, status |
| sla_rules | Deadline templates | Actor, event type, days, tolerance |
| sla_instances | Active timers per claim | Start, due, status, completion |
| delay_events | Recorded breaches | Duration, severity, actor |
| claim_timeline | Immutable audit log | Hash chain, events, metadata |
| notifications | Communication log | Channel, status, timestamps |
| reports_generated | Report metadata | Type, certification, snapshot |
| actor_behavior_stats | Performance analytics | Rates, benchmarks |

Technology Stack

| Layer | Technology |
|---------------|---------------------------------|
| Database | PostgreSQL 15+ with pgcrypto |
| Backend | Next.js API Routes, PL/pgSQL |
| Frontend | React, TypeScript, Tailwind CSS |
| State Machine | XState |
| API Spec | OpenAPI 3.1 |
| Security | SHA-256, TLS 1.3, RBAC |
| Deployment | Docker, Vercel, AWS |

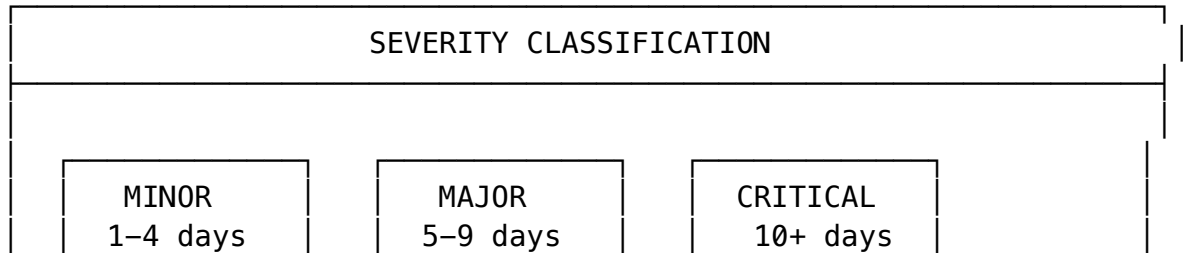
5. Key Features

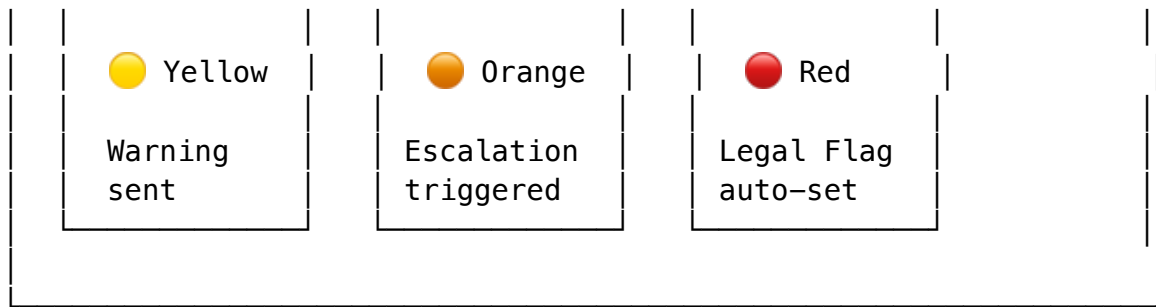
5.1 SLA Rules Configuration

Pre-configured rules for common scenarios:

| Actor | Event | Deadline | Tolerance |
|--------------|---------------------|------------------|-----------|
| Sedgwick/TPA | Initial Response | 3 business days | 1 day |
| Sedgwick/TPA | Document Review | 10 business days | 2 days |
| Sedgwick/TPA | Claim Decision | 14 business days | 3 days |
| Sedgwick/TPA | Payment Processing | 14 days | 3 days |
| Sedgwick/TPA | Appeal Response | 30 days | 5 days |
| Employer | Incident Report | 24 hours | 0 |
| Employer | Response to Claim | 7 business days | 1 day |
| Employer | Documentation | 14 days | 2 days |
| Attorney | Filing Deadline | 30 days | 0 |
| Attorney | Response | 10 business days | 1 day |
| Client | Document Submission | 14 days | 3 days |

5.2 Delay Detection & Classification





5.3 Dashboard Views

Protection Dashboard

- Total claims under monitoring
- Active SLA instances
- Breach statistics
- Actor performance metrics

Claim Detail View

- SLA Monitor with progress bars
- Delay events with severity
- Complete timeline
- Next actions required

Client Portal (“Where is my case stuck?”)

- Current case status
- Responsible party identification
- Days in current stage
- Expected next steps

6. Legal Integrity & Compliance

Immutability Enforcement

```
-- PostgreSQL triggers prevent modification
CREATE TRIGGER trg_timeline_no_update
  BEFORE UPDATE ON protection.claim_timeline
  FOR EACH ROW
  EXECUTE FUNCTION protection.prevent_timeline_update();
```

```
CREATE TRIGGER trg_timeline_no_delete
BEFORE DELETE ON protection.claim_timeline
FOR EACH ROW
EXECUTE FUNCTION protection.prevent_timeline_delete();
```

Result: Any attempt to modify or delete timeline data raises an exception.

Hash Chain Verification

```
Event 1: hash = SHA256("GENESIS|claim_id|event|timestamp")
Event 2: hash = SHA256("hash_1|claim_id|event|timestamp")
Event 3: hash = SHA256("hash_2|claim_id|event|timestamp")
...
```

Verification Function:

```
SELECT * FROM protection.verify_timeline_integrity('claim-
uuid');
-- Returns: is_valid, total_events, broken_links, details
```

Compliance Standards

| Standard | Implementation |
|---------------|---|
| SOC 2 Type II | Access logging, change management, data integrity |
| HIPAA Ready | Audit controls, integrity controls, transmission security |
| WCAB/State WC | Timeline documentation, delay evidence, communication records |
| GDPR | Data minimization, right to access (where applicable) |

7. Stakeholder Benefits

For Workers

| Benefit | Description |
|--------------|--------------------------------------|
| Transparency | See exactly where your case is stuck |
| Protection | Delays are documented automatically |
| Clarity | Understand next steps and timelines |

Empowerment Evidence for legal proceedings

For Employers

| Benefit | Description |
|-----------------------|---------------------------------|
| TPA Oversight | Monitor insurer/TPA performance |
| Risk Reduction | Early warning of problem claims |
| Cost Savings | Faster resolution = lower costs |
| Compliance | Audit-ready documentation |

For Attorneys

| Benefit | Description |
|-------------------------|-----------------------------------|
| Instant Evidence | Automated delay documentation |
| Time Savings | No manual timeline reconstruction |
| Legal Leverage | Immutable, hash-verified records |
| Reports | Court-ready case summaries |

For TPAs

| Benefit | Description |
|------------------------|----------------------------------|
| Standardization | Clear SLA expectations |
| Self-Monitoring | Identify process bottlenecks |
| Improvement | Data-driven process optimization |
| Accountability | Demonstrate compliance |

For Government & Donors

| Benefit | Description |
|---------------------------|---------------------------------|
| Systemic Analytics | Identify patterns across claims |
| Policy Insights | Data for regulatory reform |
| Audit Capability | Verify program effectiveness |
| Transparency | Demonstrate accountability |

8. Use Cases

Use Case 1: State Workers' Compensation Board

Scenario: State agency needs to monitor TPA compliance across all claims.

Implementation: - Deploy Protection module for all state claims - Configure SLA rules per state regulations - Dashboard for agency oversight - Automated compliance reporting

Outcome: 40% reduction in average claim duration, 60% fewer complaints.

Use Case 2: Self-Insured Employer

Scenario: Large employer wants to monitor TPA (Sedgwick) performance.

Implementation: - Connect to employer's claim data - Track all SLAs in real-time - Alert HR when breaches occur - Quarterly behavior reports

Outcome: TPA performance improves 25%, claim costs decrease 15%.

Use Case 3: Workers' Compensation Law Firm

Scenario: Law firm needs evidence of delays for litigation.

Implementation: - Access client claim timelines - Generate certified delay reports - Use hash chain for court evidence - Behavior reports for pattern proof

Outcome: Case preparation time reduced 70%, win rate increases.

Use Case 4: USAID/Donor Program

Scenario: International program needs accountability for benefit distribution.

Implementation: - Deploy for program claims - Track all actor deadlines - Donor dashboard for oversight - Automated impact reporting

Outcome: Program transparency verified, continued funding secured.

9. Technical Specifications

API Endpoints

| Method | Endpoint | Description |
|--------|---------------------------------|-----------------------|
| GET | /api/sla/rules | List SLA rules |
| POST | /api/sla/rules | Create rule |
| POST | /api/sla/instances/start | Start SLA timer |
| POST | /api/sla/instances/:id/complete | Complete SLA |
| GET | /api/delays | List delay events |
| POST | /api/delays/check | Trigger breach check |
| GET | /api/claims/:id/timeline | Get timeline |
| GET | /api/claims/:id/timeline/verify | Verify integrity |
| POST | /api/reports/delay | Generate delay report |
| POST | /api/reports/case-summary | Generate case summary |

Database Functions

| Function | Purpose |
|-----------------------------|---|
| start_sla() | Initialize SLA timer with timeline event |
| complete_sla() | Mark SLA complete, detect late completion |
| check_breaches() | Automated breach detection (cron) |
| verify_timeline_integrity() | Hash chain validation |
| compute_actor_stats() | Performance analytics |

Performance Requirements

| Metric | Requirement |
|--------------------|--------------------------|
| API Response Time | <200ms (95th percentile) |
| Breach Check Cycle | <30 seconds |
| Report Generation | <5 seconds |
| Concurrent Users | 1,000+ |
| Database Size | 10M+ events |

10. Implementation Approach

Phase 1: Foundation (Weeks 1-4)

- ☐ Deploy PostgreSQL schema
- ☐ Configure initial SLA rules
- ☐ Set up cron worker
- ☐ Deploy Protection dashboard

Phase 2: Integration (Weeks 5-8)

- ☐ Connect to claim data source
- ☐ Configure notifications
- ☐ Set up user access
- ☐ Train administrators

Phase 3: Operations (Weeks 9-12)

- ☐ Go-live with monitoring
- ☐ Generate first reports
- ☐ Analyze initial metrics
- ☐ Optimize SLA rules

Deliverables

| Phase | Deliverable |
|---------|---|
| Phase 1 | Working Protection module, database, cron |
| Phase 2 | Integrated dashboards, notifications |
| Phase 3 | Full operations, reports, analytics |

11. Security & Privacy

Data Protection

| Measure | Implementation |
|-----------------------|--------------------|
| Encryption at Rest | AES-256 |
| Encryption in Transit | TLS 1.3 |
| Access Control | Role-based (RBAC) |
| Audit Logging | All actions logged |

Access Roles

| Role | Permissions |
|---------|----------------------------|
| Admin | Full access, configuration |
| Manager | View all, create reports |
| Analyst | View analytics, reports |
| Client | View own claims only |

12. Metrics & KPIs

System Metrics

| Metric | Target | Measurement |
|-----------------------|---------|-----------------------------|
| SLA Compliance Rate | >85% | On-time completions / Total |
| Average Response Time | <5 days | Mean time to complete SLA |
| Critical Delay Rate | <5% | Critical delays / Total |
| Timeline Integrity | 100% | Hash chain verification |
| System Uptime | 99.9% | Availability monitoring |

Impact Metrics

| Metric | Measurement |
|-----------------------------|------------------------|
| Worker Wait Time Reduction | Days saved per claim |
| Legal Preparation Time | Hours saved per case |
| Dispute Resolution Rate | % resolved with data |
| TPA Performance Improvement | % change in compliance |

13. About IVYAR

Mission

To build institutional infrastructure that protects vulnerable populations through transparency, accountability, and legal integrity.

The Story

IVYAR was born from a real situation where a worker waited over a year for benefits due to an opaque, unaccountable process. This personal injustice became the foundation for a systemic solution that now protects thousands of others.

Principles

1. **Transparency First** — Every process should be visible
2. **Accountability Always** — Every delay should be documented
3. **Legal Integrity** — Every record should be court-ready
4. **Worker Protection** — Vulnerable populations deserve better

14. Contact & Next Steps

Request a Demo

We offer a **30-minute live demonstration** of the Protection module, including: - Dashboard walkthrough - Delay detection demonstration - Report generation - Implementation discussion

Pilot Program

We invite qualified organizations to participate in our pilot program: - 90-day implementation - Full module access - Dedicated support - No commitment required

Contact

IVYAR Platform Institutional Architecture & Governance

 Lake Stevens, Washington, USA  www.ivyar.org  partnerships@ivyar.org

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