



# Orenna

Seller / Project Developer

## Standard Operating Procedure

Version 1.0

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This document standardizes how Seller organizations use the Orenna platform to create projects, submit evidence, complete verification, and issue registry units.

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# 1) Purpose

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This SOP standardizes how Sellers (Project Developers / Implementers) use Orenna to manage the complete lifecycle of ecosystem restoration projects—from initial setup through verification, issuance, and unit transfer. The platform is designed as audit-ready "registry rails" with tamper-evident evidence lineage via hash commitments and immutable lifecycle events.

Sellers use Orenna to:

- Set up a seller organization and secure access (RBAC + MFA)
- Create and maintain projects with correct basin/location metadata
- Build Evidence Packs aligned with VWBA/WQBA/NbS methodologies
- Manage Verifier engagements and resolve findings efficiently
- Lock verified evidence and complete issuance (serialized registry units + token mint)
- Transfer units to buyers and support retirement/claims pack needs
- Maintain audit readiness through consistent documentation and platform controls

# 2) Scope

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## In Scope (Seller Responsibilities)

- Organization onboarding & user management
- Project creation and configuration
- Evidence Pack creation, submission, and revision cycles
- Coordination with Verifiers during engagement
- Allocation planning and issuance initiation
- Unit inventory actions (view, prepare transfer)
- Supporting Buyer retirement/claims documentation requests

## Out of Scope (Handled by Others)

- Verifier internal QA/signing decisions (Verifier-owned)
- Buyer retirement execution (Buyer-owned)
- Commercial contracting, pricing, invoicing, and payment settlement (generally handled outside the app)

### 3) Key Definitions

| Term                    | Definition                                                                          |
|-------------------------|-------------------------------------------------------------------------------------|
| Seller                  | Project developer/implementer creating verification projects and packaging evidence |
| Project                 | Core entity representing a restoration/stewardship activity in a basin/watershed    |
| Evidence Pack           | Versioned submission bundle of evidence items + files used for verification         |
| Verification Engagement | Formal workflow linking a project/evidence pack to a Verifier org                   |
| Attestation             | Verifier-signed outcome referencing the evidence pack and results                   |
| Issuance Batch          | Bulk issuance event creating Registry Units with unique serial numbers              |
| Registry Unit           | Serialized unit moving through ISSUED → TRANSFERRED → RETIRED                       |
| Vintage                 | Reporting year/time window associated with a unit's benefit delivery (e.g., 2024)   |

*These objects and state machines are defined in detail in the Platform Functionality Guide.*

### 4) Roles & Responsibilities (Seller-Side)

#### Seller Organization Roles (OrgRole)

| Role          | Permissions                                                  |
|---------------|--------------------------------------------------------------|
| OWNER / ADMIN | Full organization control, member invites, security settings |
| COMPLIANCE    | Read-only access + exports for audit purposes                |
| BILLING       | Subscription/license administration (if enabled)             |
| MEMBER        | Standard access per project permissions                      |

## Seller Project Roles (ProjectAccessRole)

| Role               | Permissions                                                             |
|--------------------|-------------------------------------------------------------------------|
| SELLER_OWNER       | Full project control + evidence submission + issuance readiness actions |
| SELLER_ADMIN       | Project management + evidence submission + invites                      |
| SELLER_CONTRIBUTOR | Evidence drafting + file uploads                                        |
| SELLER_VIEWER      | Read-only access                                                        |

### Security Requirement

- ✓ MFA is required for privileged roles (OWNER/ADMIN)
- ✓ Ensure Seller Owners/Admins have MFA enabled before any verification activity

## 5) Systems, Access & Prerequisites

### Required Access

- Orenna application access via Privy authentication (wallet/email/phone)
- Membership in a Seller organization
- Project access granted to your organization with the correct project role

### Before Starting a Project In-App

Sellers must have the following prepared:

- Basin/catchment location details and coordinates
- Defined activity scope and reporting boundary
- Baseline/reference data plan (definition, sources, time window)
- Methodology selection approach (VWBA vs WQBA vs NbS)
- Evidence sources secured (monitoring data, models, permits, designs, O&M; docs, etc.)

## 6) Seller Workflow Overview

The Seller workflow follows a linear progression through project setup, evidence submission, verification, issuance, and unit lifecycle management. Each stage has defined states and transition requirements.

### Lifecycle Map

```
Project (DRAFT → PENDING_APPROVAL → ACTIVE)
↓
Evidence Pack (DRAFT → SUBMITTED → IN_REVIEW → REVISION_REQUESTED →
RESUBMITTED → ACCEPTED → LOCKED)
↓
Verification Engagement (CREATED → INVITED → ASSIGNED → IN_REVIEW →
QA_REVIEW → FINDINGS_ISSUED → ATTESTED → CLOSED)
↓
Issuance (Allocation Plan → IssuanceBatch → RegistryUnits + token mint)
↓
Unit Lifecycle (ISSUED → TRANSFERRED → RETIRED)
```

## 7) Detailed Procedure

### 7.1 Seller Onboarding & Organization Setup

#### Owner/Admin Steps:

1. **Sign in** via Privy login (wallet/email/phone)
2. **Navigate to Organization Settings** — confirm legal acceptance/terms and set organization profile details
3. **Add team members** — invite members and assign OrgRoles (OWNER/ADMIN/COMPLIANCE/BILLING/MEMBER)
4. **Enforce least privilege** — only a small number of users should be OWNER/ADMIN; assign COMPLIANCE for audit/export-only needs
5. **Enable MFA** for all privileged users (required for secure operations)

#### Control Point (Must Pass)

- ✓ Org membership correct
- ✓ MFA enabled for privileged roles
- ✓ Only approved users can create/submit evidence packs

### 7.2 Create a Project

Create a project with correct metadata so verification and registry reporting are valid.

1. Navigate to **Projects** → **New Project**
2. Complete the project wizard: basic info (name, description, cover image), location mapping (coordinates + basin/watershed), baseline data, method selection (VWBA/WQBA/NbS), and team setup
3. Save as **DRAFT** until internally reviewed
4. Submit for admin review to move project to **PENDING\_APPROVAL**
5. Once approved, project becomes **ACTIVE**

#### Seller QC Checklist (Before Requesting Approval)

- ✓ Basin/catchment correctly set
- ✓ Baseline definition documented
- ✓ Method chosen matches activity type
- ✓ Internal project owner assigned
- ✓ Evidence plan exists (what you will submit and when)

## 7.3 Configure Project Access

If you need to collaborate with additional organizations (co-implementers, consultants, future buyers with read-only access):

1. Use **Project Access Grants** (invite orgs) and assign their role
2. Verify the invitee accepted the invitation
3. Revoke access if no longer needed

### Control Point

- ✓ Buyer access should be read-only unless there is a defined business reason
- ✓ Verifier access should only occur through the engagement workflow

## 7.4 Create an Evidence Pack

Build a structured, versioned evidence submission aligned to the selected method(s).

1. Go to **Project Workspace** → **Evidence** → **New Evidence Pack**
2. Populate evidence items: enter required data fields (metadata, parameters, assumptions, results) and upload files (design docs, monitoring reports, permits, datasets, model outputs)
3. Ensure each file upload is complete and correctly labeled (title, date, version, source)
4. Use internal review (Seller Owner/Admin) before submission
5. Keep pack in **DRAFT** until ready

### Evidence Pack Standards (Seller-Required)

- **Completeness:** all required checklist items filled
- **Traceability:** every critical number has a source file or reference
- **Reproducibility:** include model settings, monitoring methods, calculation sheets
- **Consistency:** basin, boundaries, and vintage match project metadata
- **Disclosure control:** use visibility controls appropriately to avoid over-sharing proprietary info



## 7.5 Submit Evidence Pack for Review

1. From the evidence pack, click **Submit** to move to **SUBMITTED**
2. Confirm the pack is now read-only for items that should not be changed during review
3. Notify your internal team that the review cycle has started

### Control Point

- ✓ Evidence pack state is SUBMITTED (not DRAFT)
- ✓ All required items are completed
- ✓ No pending internal approvals

## 7.6 Request Verification Engagement

1. From the project or evidence pack, initiate **Request Verifier Engagement**
2. Select or invite a Verifier organization from the registry
3. Confirm scope: method(s), vintage(s), pack(s) included
4. The engagement moves to **CREATED** → **INVITED** and awaits Verifier acceptance

### Control Point

- ✓ Engagement scope matches evidence pack scope
- ✓ Verifier org is qualified for the selected method(s)

## 7.7 Address Verifier Findings

After reviewers assess evidence, they may raise findings. When findings are logged:

1. Review each finding: triage as clarification needed, missing artifact, method mismatch, or data quality issue
2. Address accordingly: upload clarifications, add missing files/metadata, update method selection, replace datasets with QA/QC logs
3. Update the pack and move it to **RESUBMITTED**
4. Continue cycle until pack becomes **ACCEPTED** (supervisor approval)

## Seller SLA (Recommended Internal Standard)

- Acknowledge findings within **2 business days**
- Provide first revision response within **10 business days** (or log exception rationale)

### Control Point

- ✓ Every finding has a documented resolution path
- ✓ No changes that invalidate defined baseline/boundary without explicit notation

## 7.8 Attestation Complete & Evidence Locking

Once the Verifier signs and the pack is accepted:

1. Confirm **Attestation** status and that the engagement has moved to **ATTESTED** (then CLOSED)
2. Lock the accepted pack: Evidence Pack moves to **LOCKED** (immutable and ready for issuance)

### Critical Control

- ✓ Never attempt to "patch" a locked pack
- ✓ If something must change, create a new evidence pack/version and repeat verification

## 7.9 Prepare Allocation Plan

Prevent double counting and ensure correct attribution before issuance.

1. Create an **Allocation Plan** for the issuance: define line items (who receives what quantity, under what rules) and confirm totals align to verified benefit quantity
2. Internal review by Seller Owner/Admin
3. Ensure allocation plan is approved/complete before initiating issuance

### Control Point

- ✓ Allocation totals = verified issuance amount
- ✓ No overlapping allocations that would enable double claiming

## 7.10 Create Issuance Batch & Issue Units

Generate serialized units and mint tokens after verification.

1. Navigate to **Project** → **Units** → **Issuance**
2. Create an **Issuance Batch** (prerequisites: evidence pack ACCEPTED/LOCKED, Verifier Attestation exists, allocation plan approved)
3. System generates **Registry Units** with serial numbers and mints tokens

## Serial Number Standard

Format: ORN - {METHOD} - {PROJECT} - {VINTAGE} - {SEQUENCE}

### Control Point

- ✓ Issuance batch references the locked evidence pack hash/commitment
- ✓ Vintage year correct
- ✓ Issuance output matches verified quantities

## 7.11 Manage Unit Inventory & Transfers

### Inventory Management

- Track unit states: **ISSUED** → **TRANSFERRED** → **RETIRED**
- Confirm unit counts by vintage and method

### Transfers (Seller → Buyer)

1. Ensure you have Buyer organization details and the correct recipient
2. Initiate transfer (supports batch transfers)
3. Confirm transfer appears in ledger/audit events

#### Control Point

- ✓ Transfer recipient is correct legal entity/org
- ✓ Transfer quantity and serials match contract/off-platform agreement
- ✓ Transfer event logged in the platform

## 7.12 Support Buyer Retirement & Reporting

Even though Buyers retire units, Sellers commonly support with documentation context:

- Provide project narrative context (what, where, when, why)
- Confirm vintage and reporting period alignment
- Help buyer understand what evidence/attestation supports the claim
- Direct buyers to platform-generated artifacts (retirement receipts / claims packs) rather than ad-hoc PDFs

## 7.13 Project Changes & Corrections

### Allowed Changes

- Edits during DRAFT phase (project or evidence pack)
- New evidence pack versions for new vintages or updated monitoring

### Controlled Changes After Approval

- Use **Project Edit Request** workflow where required
- Never overwrite prior verified evidence; preserve lineage

#### Rule of Thumb

- ✓ If it changes a claim-relevant number or boundary, treat it as a new evidence submission requiring verification

## 7.14 Closeout & Archiving

When a project is complete or inactive:

1. Ensure all relevant issuances are finalized
2. Confirm buyer retirements are complete (if applicable)
3. Archive project if no longer active

## 8) Seller Checklists

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### 8.1 Project Readiness Checklist

- Project metadata complete (name, description, contacts)
- Coordinates + basin/watershed confirmed
- Baseline defined (period + source)
- Method selected and justified
- Evidence plan documented
- Roles assigned (Owner/Admin/Contributor/Viewer)
- MFA enabled for privileged users

### 8.2 Evidence Pack Pre-Submission Checklist

- All required evidence items completed
- All files uploaded and labeled (title/date/version/source)
- Calculations reproducible (inputs + outputs + assumptions)
- Monitoring or model method documented (Tier where applicable)
- Boundary and vintage consistent across artifacts
- Internal QC performed by Seller Owner/Admin
- Confidential/proprietary docs restricted appropriately

### 8.3 Findings Response Checklist

- Findings triaged (clarification vs missing doc vs recalculation)
- Each finding has an explicit resolution note
- Revised pack resubmitted with change summary
- No silent changes (all deltas explained)

### 8.4 Pre-Issuance Checklist

- Evidence pack LOCKED
- Attestation present and final
- Allocation plan complete and reconciled
- Vintage confirmed
- Issuance batch reviewed by Seller Owner/Admin

## 9) Controls, Integrity & Audit Posture

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Sellers are responsible for ensuring submissions remain compliant with core environmental integrity principles. Orenna reinforces these with workflow gates, immutable locking, cryptographic commitments, and registry lifecycle controls.

### Seller Responsibilities

- **Additionality:** Benefits would not occur without the project
- **Conservative:** Assumptions do not inflate outcomes
- **Leakage-aware:** No displaced impacts elsewhere
- **Baseline-accurate:** Reference scenario is defensible and documented
- **Permanence-aligned:** Benefit duration is supported by evidence

### Platform Enforcement Mechanisms

- Workflow gates prevent progression without required approvals
- Hash commitments provide tamper-evident evidence lineage
- Immutable locking preserves verified evidence state
- Registry lifecycle controls (issuance/transfer/retirement) prevent double counting

## 10) Appendix: Seller Standard Messages

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### A) Verifier Invitation Message

*We've submitted Evidence Pack [Pack Name / ID] for Project [Project Name],  
Method [VWBA/WQBA/NbS], Vintage [Year].*

*Please review in-platform and log any findings/questions as comments so we maintain  
a complete audit trail.*

*Seller point of contact: [Name, Email].*

## B) Findings Response Summary

*Findings addressed for Evidence Pack [ID]:*

- *Finding #1: [Resolution summary + where evidence is located]*
- *Finding #2: [Resolution summary]*

*Notes: [Any assumption updates / boundary clarifications]*

*Resubmitted on: [Date]*

## C) Buyer Handoff Message

*Units issued under Issuance Batch [ID] for Project [Project], Vintage [Year]  
are available in registry inventory.*

*Verification attestation is attached in the platform, and retirement receipts/claims packs  
can be generated directly from the buyer portfolio workspace.*



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