

ExoTrade Platform Architecture Version 3

Collaboration release and proposed deal mathematics

ExoTrade connects traders, researchers, and capital or resource sponsors around technology exchange opportunities involving reported extraterrestrial, Inner Earth, and interdimensional non-human counterparties. It combines a shared knowledge commons with controlled project workspaces, recorded contribution rights, and a configurable profit distribution model that supports Intelligentism infrastructure programs.

Build the first release in Lovable with Auth0 login, one managed PostgreSQL database, private document storage, and a small server API. Use Google Sheets for familiar financial planning and Google Docs for collaborative documents. Keep approved rights, financial inputs, and distribution records in the application database so that spreadsheet edits cannot silently change signed agreements.

Architecture decisions

Decision	Recommended starting point
Product shape	One website and one modular backend; no separate microservices.
Account model	People log in; individuals and corporations participate through verified legal parties.
Access model	Approved role + verified party authority + explicit project membership.
Deal economics	Capital recovery first; signed priority rights; configurable community profit threshold.
Knowledge policy	Share useful findings and provenance while controlling sensitive records and intellectual property.
Financial operation	Draft economics only in Phase 1; funding and all settlement and payment operations come last.
Future integration	Versioned API and project-scoped credentials using the same authorization rules.

Commercial and evidence assumptions

The role names and counterparty categories are platform taxonomy. A contact report, identity check, technical test, ownership claim, and completed transaction are separate records with separate evidence. ExoTrade does not infer that a reported civilization or technology is authentic from a user's account approval. Human representatives and legal entities remain accountable for submissions and contracts; counterparties without conventional identity documents use a documented exception and evidence review process.

Phase 1 builds the website, applications, manual identity review, projects, communication, research, recruitment, and draft economics. Funding, live commitments, signing, settlement, and all payment operations come last. Sections 26 through 31 define this release and govern which capabilities are enabled. Economic values remain adjustable pro forma proposals.

1 Roles and party ownership

An account can hold several approved roles. Role approval describes permitted activity; it does not grant access to every project. A person may act for their own individual party or an organization where their signing authority has been verified. Every contribution, funding commitment, and payout belongs to an identified legal party.

Role	Responsibilities	Financial rights
Global admin	Manage onboarding, templates, moderation, system configuration, and designated oversight.	No automatic profit entitlement from being an admin.
Trader	Source exchanges, negotiate, conduct field work, assess goods, execute approved milestones.	Largest residual operating share in the default model.
Investor or sponsor	Provide capital, tools, facilities, staff time, equipment, or other agreed resources.	Capital recovery and preferred return before ordinary participant profit.
Researcher	Document opportunities, evaluate evidence, perform technical analysis, and originate intellectual work remotely.	Accepted origination priority, milestone compensation if agreed, and residual profit share.
Foundation steward	Review beneficiary receipts and publish supported infrastructure outcomes.	Foundation allocations only; no implied access to private KYC or unrelated deals.

Authority and separation of duties

Project lead, technical reviewer, financial approver, and organization signatory are project permissions rather than new marketplace roles. Split global administration into onboarding, moderation, finance, and configuration capabilities. A submitter cannot approve their own KYC, contribution dispute, beneficiary bank change, or settlement. Require a second authorized person for economic overrides and payout approvals; remain in simulation mode until that staffing exists.

Corporations and represented parties

Organizations have authorized representatives, beneficial ownership records, approved roles, and project memberships. A representative leaving a company loses access without moving the company's historical rights to the departing person. An individual contributing personally and through a corporation must specify the beneficiary before acceptance; the same contribution cannot generate two awards.

Shared information and privacy

Provide five visibility states: public summary, verified community, project members, named restricted participants, and compliance only. Publish consented investor profiles and resource interests to the verified community. Keep personal contact details, transaction locations, identity documents, bank details, and sensitive technical evidence restricted. Admin access to protected records requires a work purpose and an audit event; ordinary support staff receive no KYC document access.

2 Onboarding and verification

Auth0 proves account authentication. A separate onboarding workflow determines whether a person or organization may research, trade, sponsor, sign, or receive distributions. All role applications require substantial identity and integrity checks, with additional checks matched to the activity and jurisdiction.

Stage	System behavior
Account created	Verify email, enroll MFA, accept current platform terms; show public material and the application flow.
Application submitted	Collect requested roles, legal party, jurisdiction, qualifications, references, conflicts, and signed declarations.
Identity review	Manual government photo ID review; organization registry, ownership, and representative-authority evidence.
Risk review	Consented manual public-record research; source coverage, identity match, disposition, relevance, and applicant response.
Manual decision	Reviewer approves each role, requests more information, or rejects with a recorded reason and appeal route.
Active participation	Access only approved activity and project invitations; monitor verification expiry and material changes.
Suspension or expiry	Block new commitments and sensitive access; preserve signed rights, evidence, and dispute history.

KYC and KYB implementation

Phase 1 uses manual KYC and KYB with no identity or background-check service integration. Applicants upload government photo ID to a separate private location with restricted reviewer access, expiry, retention controls, and access logs. Organizations submit registry and representative-authority evidence. The system creates a consented research case and source tasks for a human reviewer.

Reviewers record identity corroboration, official sources, research coverage, relevant findings, requests for clarification, and applicant responses. A same-name search hit is not an identity match and an empty search is not clearance. Human reviewers make reasoned role decisions and support corrections and appeals; automated criminality scores are prohibited. Future research adapters remain disabled until configured and validated.

Role specific checks

Traders provide operating experience, proposed methods, references, and emergency contact arrangements for field activity. Investors provide resource ownership or authority and the financial eligibility required for the relevant transaction. Researchers provide provenance and integrity declarations, credentials where relevant, and sample work. Corporate applications verify entity existence, ownership, representative identity, and power to bind the entity. Do not treat KYC approval as accreditation or investment suitability.

Counterparty review

Counterparty records can classify a report as ET, Inner Earth, interdimensional, human intermediary, other, or unknown. Record who submitted the claim, whether the source is direct or indirect, communications, artifact custody, supporting evidence, and unresolved questions. Distinguish reported, documented, independently tested, contradicted, and unresolved assessments by evidence item. Funding requires an accountable contracting party and explicit approval of unresolved identity or ownership issues; unconventional claims do not bypass controls.

3 Projects opportunities and deals

A project groups related research, counterparties, resources, and execution. An opportunity describes a possible exchange or business use. A deal is a negotiated transaction with participants, rights, economics, milestones, and settlement records. One project can contain several opportunities and several deals; an opportunity may be closed without a deal.

Record	Essential fields
Project	Owner party, lead, purpose, members, visibility, status, jurisdictions, integration settings.
Opportunity	Project, originator, exchange category, proposed value, evidence, readiness, rights needed, related opportunities.
Technology or good	Description, provenance, claimed capabilities, tests, custody, ownership or license evidence, restrictions.
Counterparty or contact	Classification, representative, report sources, consent, evidence assessment, contact controls.
Deal	Project, opportunity links, counterparties, beneficiaries, agreement, policy version, profit group, status.
Contribution	Author, beneficiary party, linked evidence, requested right, acceptance decision, time, dispute state.
Resource commitment	Sponsor, resource type, valuation evidence, return obligation, milestones, delivered amount.

Opportunity lifecycle

Draft → submitted → evidence review → qualified → seeking collaborators or resources → converted to deal → closed. Review can return a record for revision, reject it with a reason, or retain it as unresolved research. Project discovery should filter by technology category, required skills, resource needs, evidence readiness, and participation availability.

Deal lifecycle

Draft → diligence → terms proposed → signed → committed → executing → settlement review → settled → archived. A deal can be paused, cancelled, or disputed. Signing requires approved parties, accepted rights, a verified beneficiary, a complete economic model, and the required commercial review. Execution requires the agreed conditions and funding evidence; settlement requires cleared receipts, reviewed costs, a locked calculation, and independent approval.

Membership and workspace

A project workspace provides an overview, opportunities, research, technology, contacts, participants, resources, deals, economics, documents, discussion, and activity history. The lead invites approved parties and grants specific permissions. Sensitive deal records can be limited to a subset of project members. Removing workspace access does not erase a party's signed financial rights.

Commercial scope

Support purchase, sale, licensing, joint development, resource exchange, and introduction as deal types. Record the exact transferred rights, deliverables, acceptance tests, warranties if agreed, and who may commercialize the results. A promising research report does not establish ownership or a license. In the first release, non-cash exchanges can be tracked as milestones and evidence; their valuation does not automatically create distributable cash profit.

4 Research rights and shared conduct

Sharing should increase useful collaboration while preserving attribution and legitimate confidentiality. Community visibility is permission to inspect the selected information; it does not automatically grant a commercialization license. Record an explicit publication license, project evaluation permission, and commercial rights separately.

Origination and material contribution

When a researcher submits a report, store an immutable version, timestamp, source references, content hash, beneficiary, and requested rights. A first submission supports provenance but does not automatically create exclusive ownership. The project lead and an independent reviewer assess originality and material contribution against an agreed rubric: sourcing an actionable counterparty, establishing feasibility, removing a material uncertainty, or creating analysis relied on in execution.

Accepted contributions receive an agreed economic entitlement linked to named deals or a defined profit group. Researchers can receive a priority dollar amount, a capped percentage of the participant pool, a residual share, or a negotiated combination. This priority follows investor capital recovery and preferred return in the default waterfall. All parties sign the rights schedule before funding. Multiple researchers divide an agreed research allocation; awards must never exceed the available pool.

Protection against hoarding and circumvention

Require attribution, truthful disclosure, declared conflicts, and participation within agreed milestones. Prevent copied submissions from receiving duplicate credit. An originator can retain accepted economics while another trader executes the deal. A dormant opportunity can be opened to additional collaborators through a documented process; inactivity does not erase signed rights. Related-party reassignments and outside execution of a platform-originated opportunity require disclosure and review under the signed agreement.

Define competition abuse precisely: unauthorized diversion of a shared lead, sabotage, impersonation, secret duplicate deals to evade the foundation threshold, or misuse of confidential information. Support lawful independent activity and transparent collaborator selection. Avoid general bans on competition or rules that coordinate pricing, divide customers, or restrict lawful market activity; have those terms reviewed for the launch jurisdictions.

Dispute process

A participant submits evidence and identifies the disputed record, right, or amount. Preserve both positions, assign an independent reviewer, allow responses, and provide an appeal. Freeze affected settlements while allowing unrelated work to continue where practical. Resolution produces an auditable decision or signed amendment. Suspension, deletion of a profile, or a moderation action cannot retroactively rewrite ownership or confiscate a signed entitlement.

Rules that can be enforced

Use acceptance of versioned terms, structured contribution claims, project permission checks, activity records, duplicate detection, rate limits, and report or block tools. Do not promise that software can prevent every lie or outside transaction. Reputation can summarize completed work and resolved conduct findings; it must not be a fabricated credibility score or proof of extraordinary claims.

5 Deal economics and the profit threshold

Each deal adopts a signed version of the global financial template, with approved overrides. The recommended threshold measures cumulative realized distributable profit across a defined deal profit group. It does not reset by year, payout, participant, corporation, or renamed project. Related transactions using the same commercialization opportunity are grouped to prevent artificial splitting. Version 2 adds explicit cumulative profit caps by beneficial party and technology access obligations. Caps include preferred returns, research priority, and residual profit, while principal recovery remains separate. Overflow goes to Intelligentism.

Parameter	Pro forma default	Adjustment rule
Community profit threshold	USD 10,000,000	Global template; larger deals may adopt USD 50,000,000 or another signed amount.
Foundation share above threshold	90%	Applies only to the profit exceeding the threshold.
Participant share above threshold	10%	Continues participant incentives; this is a threshold, not a hard earnings ceiling.
Capital recovery	100% of eligible outstanding capital	Paid from available cash before profit; no return guarantee.
Investor preferred return	Negotiated; illustrative 8% annual simple	Use funded capital lots, dates, and agreed day basis; default non-compounding.
Research priority award	Negotiated and capped	Paid after investor preference within the participant pool.
Residual participant shares	Traders 70% / investors 20% / researchers 10%	Divide each class among named parties; totals must equal 100%.
Platform fee	0 unless expressly agreed	Approved fee schedule; no implicit admin share or hidden cost.

Define profit before coding

Available distribution cash means collected and cleared deal receipts less approved operating costs, unpaid liability reserves, and deal-level tax reserves. Capital recovery is a separate allocation of that cash; funded capital is not revenue and returned principal is not profit. Record cash contributions, loans, tools, and donated resources separately. Prevent deducting the same asset purchase both as an operating expense and as capital recovery.

Realized distributable profit is the nonnegative cash remaining after capital recovery under the approved accounting policy. Track losses and later corrections before increasing cumulative profit. Unrealized appreciation, speculative technology valuations, and outstanding invoices do not create distributable profit. Personal taxes of recipients are not automatically deal expenses; the accountant defines entity tax reserves and any tax distribution provisions before signing.

Priority and threshold must coexist

Apply the foundation split before participant priorities. Investors have priority within the retained pool, followed by researcher awards and residual shares. Version 2 also caps cumulative participant profit and transfers capped overflow to Intelligentism. Preference is priority, not a guarantee. Signed terms define accrual cutoffs, arrears, caps, and exceptions. Later preference accrual does not silently recalculate settled trader or researcher allocations.

6 Waterfall calculation and worked example

Calculation sequence

1. Reconcile cleared receipts and approved costs and reserves. Determine available cash and eligible capital still outstanding. Return capital up to the available amount, pro rata within the agreed capital priority class. If cash is insufficient, record the unpaid balance and stop profit distributions.
2. Calculate the foundation entitlement on cumulative approved realized profit. For current positive profit, use the change in that entitlement; never restart the threshold. The participant pool is the current profit less the foundation increment. Allocate only new available cash under the event-based rules in the mathematical specification.
3. Within the new participant pool, pay investor preference and accepted research priority, then distribute residual shares. Apply remaining beneficial-party and role profit caps. Transfer cap overflow to Intelligentism. Round at the beneficiary level and reconcile cents. Previously settled allocations remain recorded; corrections require the defined reversal process.
4. Generate the distribution statement, compare cumulative targets against recorded settlements, and require independent approval. Record external payment references and beneficiary confirmation. A correction that lowers prior targets enters a reviewed reversal or recovery process; do not silently generate a negative payment or erase a historical transfer.

Illustration with USD 20 million of profit

Assume USD 22 million is available after costs and reserves, USD 2 million of eligible capital is returned first, and cumulative profit is USD 20 million. Use a USD 10 million threshold, 90% foundation share above it, USD 1 million of accrued investor preference, and a USD 500,000 accepted research priority award. These amounts illustrate ordering and are not promised yields.

Allocation	USD amount	Basis
Capital returned	2,000,000	Principal; excluded from profit allocation.
Intelligentism	9,000,000	90% of the USD 10,000,000 excess profit.
Participant pool	11,000,000	First USD 10,000,000 plus 10% of excess.
Investor preference	1,000,000	Paid first from the participant pool.
Research priority	500,000	Paid next from the participant pool.
Residual pool	9,500,000	Available for the 70% / 20% / 10% split.
Traders total profit	6,650,000	70% of residual.
Investors total profit	2,900,000	Preference plus 20% of residual; capital is additional.
Researchers total profit	1,450,000	Priority plus 10% of residual.

Check: trader, investor, and researcher profit totals equal USD 11 million; adding USD 9 million for Intelligentism equals USD 20 million profit. Adding the separate USD 2 million capital recovery equals USD 22 million total available cash. The USD 10 million threshold is shared across the deal group, not a USD 10 million allowance for each person.

7 Google Sheets and financial controls

Use one global admin Google Sheets template and one workbook per deal or profit group. Google Docs can hold narratives and negotiated documents. Sheets is the planning interface; the database stores typed approved inputs, signed policy versions, calculations, and settlement records. A live formula or editable workbook must never directly authorize a payment.

Workbook tab	Purpose
Instructions and policy	Template version, profit group, threshold, rates, currency, approval state, and definition of profit.
Participants	Verified beneficiary IDs, signed class shares, research priority awards, and caps.
Capital and resources	Dated funded lots, preferred return basis, valuation evidence, outstanding capital, tools and in-kind terms.
Receipts and costs	Cleared receipts, approved expenditures, reserves, accounting references, and attachments.
Waterfall	Cumulative profit, threshold split, priority entitlements, residual allocation, and current amounts due.
Scenarios	Hypothetical outcomes clearly separated from actual approved financial records.
Distribution history	Batch IDs, approved amounts, settlement references, and cumulative comparisons.

Controlled import workflow

An authorized finance user explicitly imports typed values from approved input ranges. The server validates participant IDs, percentages, currency, bounds, capital balances, policy version, and duplicate accounting references. It recalculates the waterfall using application logic, compares the sheet outputs, and displays differences. Approval locks the input snapshot and calculation hash. Subsequent sheet edits produce a new draft; accepted amendments require the relevant signatories.

Read cell values as data only: never execute spreadsheet formulas or scripts inside the backend. Keep calculated ranges protected for convenience and regenerate them from the template. Access control comes from the application and Google file permissions; hidden tabs and protected cells are not confidentiality boundaries.

Access and connector scope

Use a dedicated finance workspace or service identity for template ownership. Grant each deal workbook only to the approved human finance participants. Prefer Google's per-file authorization scope where the chosen connection flow permits it. Sheets API scopes apply at the spreadsheet file level, not to individual tabs [4]; separate workbooks are needed for different audiences. Store provider credentials encrypted on the server, and revoke Google file access when project authorization ends.

Amendments and validation

Global admin edits affect future deal drafts. Existing signed deals retain their policy version. Raising a threshold or changing a beneficiary requires a visible amendment, stated reason, and required consent; no retroactive unilateral override. Accept only valid nonnegative thresholds, rates between 0 and 100%, complete beneficiary mappings, and residual shares totaling 100%. A trader majority exception requires an explicit signed waiver; class and person caps must have a defined overflow destination.

Start with USD cash accounting and one simple preferred return class. Add foreign exchange, multiple seniority classes, automated accounting imports, or actual payment initiation only when there is a tested need. Snapshotting a financial workbook is the priority integration; unrestricted two-way sync can wait.

8 Website and application architecture

Use Lovable to build a responsive React and TypeScript website with a white, blue, restrained glass interface. Connect an owned Supabase project for PostgreSQL, private storage, and server functions; Lovable documents support for that backend integration [1]. Use Auth0 as the only human login system. Keep the backend a modular application with onboarding, CRM, permissions, rights, economics, integrations, and audit modules.

Layer	Responsibility
Website	Public explanation, Auth0 sign-in, applications, dashboards, project workspaces, and admin screens.
Server API	Validate identity, check current authorization, run business transitions, calculate economics, and issue file access.
PostgreSQL	Party identity links, CRM records, memberships, evidence metadata, versioned rights, and financial records.
Private storage	Research files, agreements, technical evidence, and tightly segregated identity documents.
Provider adapters	KYC provider, Google documents, email delivery, electronic signature, and future external systems.
Scheduled worker	Expiring checks, notification delivery, retries, reconciliation, and audit export.

Authentication and database authorization

For the website use Auth0 Authorization Code with PKCE and MFA. Request access tokens for the ExoTrade API audience; the API verifies signature, issuer, audience, expiry, and required scopes [2]. Map the Auth0 subject as text to an internal UUID. Current party authority, approved roles, and membership live in the database; token claims alone cannot preserve access after suspension.

Route all private application operations through the server API in the first release. The browser has no direct private-table access. The API connects using a restricted PostgreSQL application role with no BYPASSRLS, no table ownership, and no schema write privileges. Within each transaction it sets a locally scoped authenticated subject after JWT verification; RLS policies resolve that subject to current memberships and permissions. Missing identity context denies access. Use transaction-local context so pooled connections cannot carry one user's identity into another request.

Keep privileged service credentials for migrations and narrowly defined jobs, never general user requests. If later introducing browser-to-Supabase reads, use the supported Auth0 third-party integration and its documented token handling, then retest every policy. That integration has a specific ID-token role-claim requirement [3]; it is separate from ExoTrade API access-token validation and should not be improvised.

Screens and navigation

Public: home, mission, how it works, roles, rules, evidence policy, and apply. Signed in: dashboard, shared library, opportunity directory, collaborator directory, my projects, contributions, resources, distributions, and notifications. Admin: applications, KYB, content reports, rights disputes, policy templates, financial approvals, beneficiary verification, integrations, and audit. Project tabs use the same membership checks as their API endpoints.

9 Data model and integrity boundaries

Separate domain meaning from storage design. A project is a collaboration boundary, an organization is a legal party, and a deal is a contract workflow; they are not interchangeable tenants. Every private business record carries `project_id` where applicable. A deal-level access subset can narrow project permission. Compliance records remain separately restricted.

Table group	Core tables and relationships
Identity and parties	<code>users(auth0_subject unique)</code> ; <code>parties(person or organization)</code> ; <code>party_representatives(user, party, authority)</code> ; <code>role_applications</code> ; <code>verification_cases</code> .
Projects and CRM	<code>projects</code> ; <code>project_memberships(party, project, permissions)</code> ; <code>opportunities</code> ; <code>deals</code> ; <code>deal_opportunities</code> ; <code>counterparties</code> ; <code>technologies</code> ; <code>contact_permissions</code> .
Research and rights	<code>research_items</code> ; <code>evidence_versions</code> ; <code>contributions</code> ; <code>contribution_reviews</code> ; <code>entitlement_versions</code> ; <code>disputes</code> ; <code>document_links</code> .
Economics	<code>economic_policy_versions</code> ; <code>profit_groups</code> ; <code>deal_policy_snapshots</code> ; <code>resource_commitments</code> ; <code>capital_lots</code> ; <code>financial_entries</code> ; <code>distribution_batches</code> ; <code>distribution_lines</code> .
Operations	<code>agreements</code> ; <code>agreement_signatories</code> ; <code>notifications</code> ; <code>audit_events</code> ; <code>project_integrations</code> ; <code>integration_credentials</code> ; <code>outbox_events</code> ; <code>webhook_receipts</code> .

Constraints that protect meaning

Use UUID keys, timestamps, author identity, lifecycle state, and explicit foreign keys. Use decimal monetary types or integer minor units, not binary floating point. All amounts include currency and valuation basis. Scope joins and document references to the same project; foreign keys and server validation must block cross-project links. Do not allow a client to reassign an existing record to another project or beneficiary.

One distribution batch references a locked policy version, signed rights version, evidence-backed accounting inputs, cumulative calculation, and unique approval ID. Financial entries are appended with reversal references instead of edited in place after approval. Deduplicate receipts by source and reference. Acquire a database lock per profit group during approval so concurrent batches cannot distribute the same profit twice. Version 2 stores beneficial-owner cap balances, preferred-return accrual events, contribution scoring versions, technology access covenants, and foundation program outcomes.

Transactions and audit

Combine lifecycle transitions, approvals, financial lines, and their audit records in one transaction. Use an outbox event written in the same transaction to trigger notifications and integrations after commit. Audit records capture actor, affected legal party, action, target, time, request ID, and permitted before and after fields. Do not put identity documents, tokens, raw secrets, or bank details in logs. Restrict audit updates and deletions; export critical history to a separately controlled retention store.

Retention and recovery

Support record archival and legal holds. A deletion request should remove unnecessary personal information under the applicable retention policy while preserving legally required agreements and accounting evidence. Define daily backup and point-in-time recovery requirements with the selected database plan, and test restoration. Begin with a documented 24-hour recovery point and one-business-day recovery time target; shorten those targets before enabling monetary settlement operations.

10 Security and project API

Security baseline

Require MFA for approved participants and stronger reauthentication for signing, sensitive exports, bank changes, and finance approval. Enforce authorization on the server for reads, writes, downloads, search, export, notifications, and integrations. Private files use short-lived signed URLs issued after permission checks; uploads have limits, quarantine, content-type verification, malware scanning, and safe download handling. User-submitted rich text is sanitized.

Rate-limit login-adjacent endpoints, applications, messaging, uploads, and exports. Store all secrets server-side; isolate development from production. Alert on repeated denied access, bulk export, altered beneficiaries, failed provider signatures, and abnormal settlement changes. Current access suspension must take effect at the next private request rather than waiting for token expiry. An admin cannot impersonate a party to accept financial rights.

API design

Expose `/api/v1` with typed schemas, pagination, validation, consistent errors, and request IDs. Write operations support idempotency where repetition could duplicate a commitment, approval, or settlement. Publish an OpenAPI description as the integration surface grows. Start with internal endpoints; enable external credentials only after project isolation is tested.

Endpoint family	Purpose and constraints
<code>/projects</code> and <code>/projects/{id}/members</code>	List authorized projects; manage membership through explicit lead or admin permission.
<code>/projects/{id}/opportunities</code> and <code>/research</code>	Read or submit allowed records; visibility filters apply to every result and attachment.
<code>/projects/{id}/deals</code> and <code>/contributions</code>	Manage transaction drafts and accepted research rights under workflow permissions.
<code>/deals/{id}/economics/preview</code>	Calculate a scenario; no approval or payment effect.
<code>/deals/{id}/distribution-batches</code>	Create reviewed actual allocations with idempotency and profit-group locking.
<code>/projects/{id}/integrations</code>	Create, rotate, disable, and audit a project's integration grants.

Project scoped connections

Each integration stores a project, client identity, explicit scopes, permitted record types, sensitivity ceiling, expiration, and approval actor. A credential for project A cannot request project B. Start with short-lived OAuth client credentials where practical, or scoped expiring API keys stored only as hashes. Credential scope intersects with current project permission; it does not override it. KYC, beneficiary banking, and settlement approval are never part of a generic data-export grant.

Send opt-in events such as `opportunity.updated`, `contribution.accepted`, `deal.status_changed`, and `distribution.approved`. Include event ID, project ID, version, and signed delivery timestamp. Use redacted payloads, retry with backoff, deduplication, and a failed-delivery queue. Validate destination hosts and block private or metadata addresses to prevent webhook SSRF. Disable credentials and pending deliveries immediately on grant revocation.

11 Seed content and foundation outcomes

Seeding a useful system

Seed a curated library of sourced research leads, technology categories, resource requests, collaboration tasks, and example project structures. Suggested categories include materials, energy, environmental restoration, communications, transport, agriculture, habitation, and manufacturing. Each research lead names its public source, author, date, rights, and evidence status. A seed record must never imply a verified ET contact, working technology, actual investment commitment, or realized profit without supporting records.

Provide a separate demonstration workspace with fictional traders, investors, counterparties, and economics. Label every demonstration record visibly and block investment, signing, payouts, and production credibility badges. Real contact and sponsor profiles require consent and verified authority before displaying private details or implying availability. Version imports, deduplicate sources, and keep imported data within its permitted visibility.

Participation mechanics

Offer research tasks, open resource needs, expert review requests, and transparent collaborator applications. Recommend projects using declared skills and interests. Let researchers submit evidence remotely, investors express non-binding interest, and traders propose execution plans. Discussions stay attached to the relevant project or opportunity. Use notifications and comments in the first release; standalone chat, recommendation engines, and automated matching can come later.

Intelligentism allocation records

Record the foundation beneficiary, governing agreement, entitlement calculation, amount due, payment reference, receipt acknowledgement, and designated purpose. Publish aggregated receipts and outcomes where consent and privacy permit. The foundation tracks infrastructure programs for edible gardens, automated farming, housing, roads, tunnels, and associated public benefit work, with budgets, milestones, responsible operators, and evidence of delivery.

Keep foundation program decisions separate from deal participant self-interest. The platform's allocation rule does not alone establish tax exemption, deductibility, or a right to recycle foundation money into a participant-owned business. IRS rules restrict direct and indirect self-dealing involving private foundations [5]. Foundation grants, ownership interests, contracts with related parties, and infrastructure beneficiaries require appropriate governance and professional review.

Commercial launch gates

Passive sponsors seeking profit from others' work require securities-law assessment; the Supreme Court's investment-contract framework is relevant to the facts of each arrangement [6]. Transaction-related compensation for raising capital can also raise broker-dealer issues, as the SEC explains [7]. Research compensation for technical work and compensation for securities introductions must be classified separately. Record approved transaction structures, eligible jurisdictions, and necessary intermediary arrangements before enabling live investment commitments.

Phase 1 supports research collaboration, applications, consented introductions, projects, communication, and pro forma economics. Funds, bank details, live investment commitments, signing, settlement approval, and payment initiation are disabled. The later financial release requires its own operating documents, verified foundation details, and transaction-specific approval.

12 Lovable implementation and release checks

Build in four increments

Increment	Deliverable	Release condition
1 Foundation	Website, Auth0, parties, applications, reviewer queue, roles, project memberships, private storage, audit.	Denied users and nonmembers cannot access private records or files.
2 Collaboration	Projects, opportunities, technologies, sourced research, contributions, contacts, resources, and disputes.	Evidence versions and accepted rights remain attributable and access controlled.
3 Economics	Versioned admin templates, deal terms, waterfall preview, agreement references, Sheets snapshots, external settlement history.	Boundary calculations and signed-policy immutability pass independent review.
4 Integrations	Scoped external API, webhook outbox, credential revocation, approved finance activation.	Cross-project leakage, duplicate actions, and revoked credentials are blocked.

Concrete acceptance checks

Verify public, pending, approved, suspended, organization representative, project member, nonmember, and restricted deal participant access across API, search, export, files, and notifications. Test the real Auth0 login and token validation path, including expired tokens, wrong issuer or audience, stale role claims, and pooled database context isolation. A changed browser payload must never approve a role, change a beneficiary, or override a project scope.

For economics test zero cash, loss, insufficient capital recovery, partial preference, multiple capital dates, several researchers, exact threshold, threshold crossing, repeated payouts, USD 50 million override, corrections, rounding, and related deals in one profit group. Confirm the worked example reconciles. Test simultaneous approval attempts, replayed provider callbacks, duplicate payment references, changed sheet formulas, and proposed changes to signed deals.

Run a backup restore, integration revocation, private-file permission test, and complete pilot with fictional data before live use. A demonstration investor, contact, or balance must not appear as production evidence. Record pilot findings and approval owners; do not describe a financial integration as complete because a button renders.

Lovable starting brief

Build ExoTrade as a responsive white and blue CRM using React and TypeScript, Auth0-only login, an owned Supabase PostgreSQL backend, private storage, and a server API. Implement increment 1 first, with migrations, typed validation, server-side permissions, and database RLS through a restricted application role. Support individual and organizational parties, multiple approved roles, project membership, manual KYC decisions, and append-only audit. Use clearly labeled fictional demonstration data only. Do not place server credentials in frontend code or silently add a second login provider.

Then add opportunities, research provenance, accepted contribution rights, deals, sponsor resources, and the versioned economics workflow described here. Keep investor capital recovery separate from profit. Apply the configurable foundation threshold to cumulative profit groups and distribute retained profit by signed priority and residual rules. Treat Google Sheets as an explicit draft import and planning interface. Keep real funding and payment initiation disabled until the designated activation requirements are satisfied.

13 Intelligentism source and policy choices

The Intelligentism page proposes reinvesting entrepreneurial gains into shared value, infrastructure, and eventual broad public benefits [8]. ExoTrade implements that direction through contracted participation, capped profit rights, technology access covenants, and a separately governed foundation budget. Its proposed evolutionary optimization remains an advisory layer. The architecture does not assume that an optimizer can prove a global optimum for society.

Reconcile the published numerical example

The embedded illustration contains four separate profit rows. Reading them as distinct deals, rather than cumulative bands of one deal, produces the following arithmetic. The prose rounds the scale differently; the model below follows the visible row inputs.

Example deal profit	Foundation share	Participant profit	Foundation allocation
\$1,000,000	0%	\$1,000,000	\$0
\$10,000,000	90%	\$1,000,000	\$9,000,000
\$100,000,000	99%	\$1,000,000	\$99,000,000
\$1,000,000,000	99%	\$10,000,000	\$990,000,000
Total \$1,111,000,000	Mixed rates	\$13,000,000	\$1,098,000,000

The illustration's \$1.098 billion foundation total reconciles. Participant retention is \$13 million in the four rows, rather than the \$14 million mentioned in the prose. Its 35% cash allocation is \$384.3 million; dividing by the illustrated 350 million recipients gives \$1.098 each, rounded to \$1.10. That is a distribution from this budget, not a funded monthly promise. These are source scenario inputs, not current population estimates.

Avoid a discontinuous profit cliff

Applying a new foundation rate to all profit when a threshold is crossed can reduce participant earnings after additional profit. ExoTrade therefore uses marginal bands: a higher sharing rate applies only to incremental profit above a threshold. The default remains the user's first \$10 million participant allowance and 90% foundation sharing above it. A 99% policy or additional marginal band must be approved as a named policy.

Make huge gains explicitly finite

The 90% rule alone permits unlimited participant earnings as total profit grows. Version 2 adds a cumulative profit cap per beneficial party within a deal profit group. Illustrative limits for the model's three distinct parties are \$10 million for a trader, \$5 million for an investor, and \$3 million for a researcher; the overarching beneficial-party limit is \$10 million. Larger signed transactions may adopt larger limits, such as \$50 million. These values are proposals, not taken from the source page.

14 Mathematical definitions and conservation

Symbol	Meaning
C	Unallocated cleared cash available after approved costs, senior liabilities, and reserves.
B	Eligible contributed principal still outstanding before this distribution.
K	Principal recovered in this distribution.
p	New approved realized profit available for this distribution.
P	Cumulative approved realized profit for the related deal group.
H and f	Participant allowance threshold and foundation marginal rate.
U	New participant profit pool before individual caps.
E and Q	Investor preference and researcher priority paid in this event.
aT al aR	Signed residual class weights; sum equals one.
Lj and Vj	Signed party profit cap and cumulative paid or irrevocably allocated profit.
F and O	Base foundation entitlement and overflow from participant caps.

Cash and realized profit

$$K = \min(\max(C, 0), B)$$

$$p = \max(C - K, 0)$$

These two cash formulas are valid only after finance confirms that costs, asset basis, reserves, and outstanding principal reconcile. C excludes new contributions, unpaid invoices, unrealized asset marks, restricted cash, and cash already earmarked for prior approved batches. B excludes amounts already recovered and includes only signed principal obligations. Do not subtract original capital twice through both expenses and principal recovery.

For new deployments and losses, use the approved accounting ledger to determine p and cumulative P. A new capital contribution never raises P. A later recognized cost or loss may reduce P; that invokes the correction process rather than a new positive payout calculation. The workbook illustrates a final cash settlement with all costs and capital known, not a complete general ledger.

Foundation and participant conservation

$$F(P) = f \times \max(P - H, 0)$$

$$\Delta F = F(P_{old} + p) - F(P_{old})$$

$$U = p - \Delta F$$

$$p = \Delta F + O + \sum D_j$$

Dj denotes the actual new profit allocated to beneficiary j.

Capital recovery is excluded from profit sharing and profit caps. For each authorized event, principal plus participant profit plus foundation allocations plus any explicitly withheld cash must equal available cash. Financial promises and non-cash valuations are not allowed to manufacture this equality. Foundation base sharing and cap overflow are recorded separately.

15 Marginal sharing and profit limits

Three permitted policy shapes

$$\text{Default: } F_{90}(P) = 0.90 \times \max(P - H, 0)$$

$$\text{Alternative: } F_{99}(P) = 0.99 \times \max(P - H, 0)$$

$$\begin{aligned} \text{Progressive: } F(P) &= 0.90 \times \min(\max(P - H, 0), J - H) \\ &+ 0.99 \times \max(P - J, 0) \end{aligned}$$

H is \$10 million and J is \$100 million in the following comparison. Values show retained participant pools before individual caps. The progressive policy uses 90% sharing between H and J and 99% above J. The comparison contains mathematical policy alternatives, not recommendations to change signed deals.

Profit USD millions	90% retained	99% retained	Progressive retained
1	1	1	1
10	10	10	10
20	11	10.1	11
100	19	10.9	19
1,000	109	19.9	28

Hard cap after signed priorities

$$\text{Remaining cap } j = \max(L_j - V_j, 0)$$

$$\text{Actual allocation } j = \min(\text{nominal allocation } j, \text{remaining cap } j)$$

$$O = \sum (\text{nominal allocation } j - \text{actual allocation } j)$$

For a party with several roles, count all preferred return, origination awards, and residual profit against one beneficial-party cap. Apply any lower signed role limit as an additional constraint. Return of contributed principal remains outside the profit limit. Resolve ultimate beneficial owners and controlled parties before signing; transfers, aliases, or new corporations cannot restart a cap.

Cap overflow goes to Intelligentism rather than increasing another participant's share. That avoids creating incentives to crowd out a collaborator. Ordinary costs and service fees cannot be used to disguise profit; related-party payments require disclosed rates and review. If a fee is economically compensation for participation, the agreement must state whether it counts toward the cap and why.

Caps limit upside, but they cannot justify reducing already signed rights after a successful outcome. Define the caps and the stopping rule for preference accrual in the initial agreement. Contract review rejects a guaranteed priority award that is inconsistent with the remaining cap. Disputed or withheld entitlements remain reserved in the cap ledger so they cannot be promised twice.

16 Capital and preferred return mathematics

Use the capital actually at risk

$$\text{Preferred accrual } i = r_i \times \Sigma (\text{outstanding principal } i,k \times \text{days } k / Y)$$

Use non-overlapping intervals k . The year basis Y is 365 in the proposed simple model. A partial capital repayment lowers the principal for later intervals; undrawn commitments earn no preference. Stop accrual on the effective recovery date, signed termination date, or exhaustion of the relevant profit entitlement as the agreement specifies. Unpaid preferred return does not compound unless a separate signed policy permits it.

Capital interval	Outstanding principal	Days	Annual rate	Accrued preference
Investor lot A	\$1,000,000	365	8%	\$80,000
Investor lot B	\$1,000,000	182.5	8%	\$40,000
Total	\$2,000,000	Capital days basis	8%	\$120,000

Pay preference from the current retained pool

$$\text{Preferred due} = \max(\text{total accrued} - \text{previously satisfied}, 0)$$

$$E = \min(U, \text{preferred due}, \text{investor remaining cap})$$

$$\text{Priority due} = \max(\text{accepted award} - \text{previously satisfied}, 0)$$

$$Q = \min(U - E, \text{priority due}, \text{researcher remaining cap})$$

Within the same seniority class, distribute insufficient capital recovery or preference pro rata by the eligible outstanding claim. Senior classes can be added later with explicit ordering. Priority shortfalls remain recorded as arrears only while the signed cap and termination rules permit further entitlement; an exhausted cap does not create an infinite unpaid obligation.

Resources and researcher valuation

Treat leased tools, loaned equipment, donated resources, funded operating expenses, and repayable investment as separate instruments. Resource value is supported by invoices or agreed market benchmarks. Principal recovery requires an express monetary obligation. Equipment returned in kind does not also receive full cash principal recovery. Supplier invoices and agreed researcher service fees are reviewed costs; profit rights are separate entitlements.

Contribution scoring helps negotiate shares before signing. A proposed research score combines documented origination, technical validation, execution relevance, and agreed continuing work. Use predefined criteria, evidence, independent review, and appeals. A score never automatically changes signed rights or turns an extraordinary claim into verified technology.

17 Participant allocation and worked examples

Residual allocation after priority

$$G = U - E - Q$$

$$\text{Nominal trader profit} = aT \times G$$

$$\text{Nominal investor profit} = E + aI \times G$$

$$\text{Nominal researcher profit} = Q + aR \times G$$

Apply caps sequentially: satisfy investor priority within cap, satisfy researcher priority within cap, then apply residual class shares to G and cap those residual allocations by remaining balances. Unused cap headroom does not guarantee a payment. The default residual weights are 70%, 20%, and 10%, respectively. Traders have the largest residual reward; investor priority may make investor total profit larger in a low-profit outcome.

Three distinct parties with no prior allocations

Use \$2 million principal, \$120,000 accrued investor preference, a \$500,000 accepted researcher award, and party limits of \$10 million / \$5 million / \$3 million. All amounts below are profit; principal recovery is additional. The first case has \$22 million available cash and the second has \$1.002 billion.

Allocation USD millions	Profit 20	Profit 1,000
Base foundation share	9.000	891.000
Participant pool before caps	11.000	109.000
Trader actual profit	7.266	10.000
Investor actual profit	2.196	5.000
Researcher actual profit	1.538	3.000
Cap overflow to foundation	0.000	91.000
Foundation total	9.000	982.000
Participant actual total	11.000	18.000

At \$20 million profit, G is \$10.38 million. The trader receives 70% of G, the investor receives \$120,000 plus 20%, and the researcher receives \$500,000 plus 10%. At \$1 billion profit, the three party limits bind; \$91 million of the nominal participant pool goes to Intelligentism. The foundation receives its base \$891 million plus that overflow. Principal is returned separately and does not consume investor profit capacity.

Rounding and beneficial owner handling

Calculate entitlements at high precision, then allocate currency minor units using the largest-remainder method with a stable party-ID tie break. Do not exceed a cap by one cent. Where a party has multiple roles, allocate priorities first and then residuals using the signed common cap; show the ordering before consent. A production system must allocate among actual parties, not cap an entire role class merely because the example uses one person in each class.

18 Repeated distributions and corrections

Maintain state for every related profit group

Store cumulative approved profit, base foundation entitlement, cap overflow, allocated principal, preference accrual intervals, preference satisfied, researcher priority satisfied, and each beneficial party's paid or irrevocably allocated profit. A payment delay does not free cap headroom. Signed rights versions and beneficiary ownership mappings are part of the calculation state.

Event profit USD millions	Cumulative profit	New foundation base	New participant pool
4	4	0	4
9	13	2.7	6.3
7	20	6.3	0.7
Total 20	20	9	11

This path uses the same \$10 million threshold and 90% marginal foundation rate. It produces the same \$9 million base foundation allocation and \$11 million pre-cap participant pool as a single final distribution. For participant allocations, equivalence also requires unchanged shares, consistent caps, and the same total priority obligations available at the same economic cutoff. New preference accrual or amended rights can alter timing; do not promise path independence in those cases.

Cash timing and financial safeguards

At each event, new participant cash satisfies current outstanding priorities and then residual rights. Later accrual does not retrospectively take money from already settled residual distributions. If all priority obligations must be satisfied before any residual distribution, use a signed holdback and final true-up mechanism. The simple workbook models the final settlement, while this state machine defines production interim settlement.

If cumulative approved profit falls after a cost correction, recompute the base entitlement target, compare it to allocated amounts, and freeze new allocations pending review. Record recoverable overpayments, offsets, legal holds, and any contractual loss allocation. A foundation receipt cannot be reversed merely by editing a spreadsheet. Use contractual recovery procedures and reviewed ledger entries. Freeze contested amounts rather than confiscating unrelated rights.

Protect against repeated execution

A transaction locks the profit group and checks its version. Read all capital, priority, cap, and rights state, calculate the next batch, verify conservation, append lines and updated balances, and publish an outbox event after commit. A unique idempotency key returns the original batch on retry. Second-person approval is separate from calculation. Bank settlement confirmation updates payment state without creating another entitlement.

19 Fairness incentives and team optimization

ExoTrade uses two algorithms with different authority. A deterministic rules engine calculates signed economics and access rights. A planning optimizer recommends project funding, teams, proposed compensation, and foundation programs within published constraints. Recommendations need approval; neither an AI agent nor a global admin may use a new score to rewrite an existing agreement.

Participation must be rational before signing

$$\begin{aligned} \text{Expected net value } j = \sum \text{scenario probability } s \times \text{participant payoff } j,s \\ - \text{opportunity cost } j - \text{expected uninsured losses } j \end{aligned}$$

Participants can assess downside, base, and upside cases without turning uncertain probabilities into assurances. Separate profit from principal recovery, and include capital losses, time, cash outlay, and resource costs. A sponsor's preferred return does not guarantee acceptable expected value. An opportunity with weak investor or trader incentives should change its cost, scope, terms, or funding structure before acceptance; a larger profit cap alone does not fix a negative expected outcome.

A constrained planning objective

$$\begin{aligned} \text{Maximize: } wB \times \text{public benefit} + wA \times \text{technology access} + wV \times \text{participation value} \\ - wD \times \text{delay} - wC \times \text{total cost} - wR \times \text{expected harm} \end{aligned}$$

Normalize each term against published benchmarks, record uncertainty, and publish weights and their approving authority. Constraints require available resources, evidence gates, participant consent, viable execution, principal and priority ordering, beneficial-party profit limits, and technology access obligations. Objective weights express governance choices rather than universal mathematical truth. Reject infeasible proposals rather than forcing a cosmetic score.

Fairness measures that can be audited

Assess whether promised priority is honored, equal claim classes receive proportional treatment, equivalent contributions use the same review criteria, source credit is preserved, and every recipient sees the rights schedule before commitment. Report the distribution of profit relative to documented risk, capital, and contribution. Do not use arbitrary demographic or belief scores to allocate rights. Traders receive the largest default residual share; material research may earn an explicit priority award.

Optimization controls

Begin with rule-based ranking and a transparent budget solver. Compare recommendations with a simple baseline and test sensitivity to uncertain inputs. Require explanations for each selected or rejected proposal. A genetic algorithm can later search a complex non-linear planning space, with fixed constraints, reproducible seeds, logged runs, and human approval. It cannot certify a global optimum, infer truth from popularity, or override a signed entitlement.

20 Technology flow and access obligations

Money sharing alone does not deliver technology to people. Every qualifying technology deal needs an access covenant specifying who owns the rights, what can be transferred, the intended beneficiaries, deployment milestones, affordability, maintenance, publication permissions, and the remedies for a missed obligation. The human contracting parties and rights holders must have authority to grant those rights.

A practical flow through the system

Research submission → evidence and ownership review → qualified opportunity → funded validation → acceptance testing → signed license or transfer → pilot deployment → maintained access → wider dissemination. Each stage stores evidence, responsible parties, deadlines, and access decisions. Technical tests assess actual performance; contact classification remains separate.

Metric	Proposed measure	Protection against gaming
Access coverage	People or institutions with usable access divided by eligible target population.	Count unique beneficiaries and working deployments, not registrations.
Deployment time	Days from accepted technical validation to usable pilot deployment.	Publish start and end definitions and approved reasons for delay.
Affordability	Beneficiary cost relative to the approved affordable benchmark.	Include recurring costs, tools, maintenance, and required licenses.
Operational delivery	Availability and supported use during the measured service period.	Independent sampling, repair records, and recurring inspection.
Knowledge availability	Approved documentation and training delivered under usable rights.	Confirm license, accessibility, accuracy, and actual delivery.

Incentives for real delivery

$$\text{Released execution reward} = \text{accepted milestone fraction} \times \text{signed reward pool}$$

A proposed trader schedule could release 40% at accepted exchange completion, 30% at pilot acceptance, 20% at agreed deployment access, and 10% after the maintenance period. These are contract options, not automatic settings. Each payment remains subject to cash availability, investor and research priorities, and profit caps. Research origination rights do not disappear because a trader’s delivery milestone is delayed.

Record promised cash as withheld entitlement where appropriate, rather than redistributing it opportunistically. Foundation profit allocations and technology rights are separate assets. A deal may provide money, a nonexclusive public-benefit license, discounted deployment rights, or several of these. Unsupported claims, disputed ownership, incomplete testing, or missing transfer authority prevent commercial activation; they can remain in the research library with appropriate status.

21 Foundation budget and reinvestment

Separate receipts from deployable budget

$$W = \text{opening unrestricted cash} + \text{settled receipts} + \text{realized investment income} \\ - \text{liabilities due} - \text{newly protected reserve} \\ \text{Deployable budget} = \max(W, 0)$$

Use settled foundation receipts, not participant promises or a profit forecast. Track restricted receipts separately and allocate them only to permitted purposes. The foundation board approves operating budgets, investment policy, reserves, and program eligibility. Source illustrations of broad cash benefits are a future policy concept; actual programs require an eligible beneficiary definition and an appropriate legal structure.

Budget shares and outputs

$$\text{Program budget } k = \text{deployable budget} \times \text{approved share } k \\ \sum \text{approved shares} = 1; \text{ each share} \geq 0 \\ \text{Benefit per eligible recipient} = \text{cash benefit budget} / \text{eligible recipient count} \\ \text{Completed units } k = \text{floor}(\text{program budget } k / \text{verified lifecycle cost per unit } k)$$

The companion workbook reproduces the source's 14 budget shares as editable inputs, with separate reserve and reinvestment fractions before program spending. If reserve plus reinvestment exceeds 100%, or program shares do not sum to 100%, outputs are marked invalid. The illustrated source allocates all budget among programs; retention is an additional proposed policy, not a hidden assumption.

Reinvestment and sustainability

$$\text{Next period investable assets} = \text{current assets} + \text{reinvestment} - \text{disposals} \\ + \text{realized gains} - \text{realized losses}$$

Illustrate reinvestment without assuming guaranteed compounding. Operating cash, an invested portfolio, restricted funds, and infrastructure assets are separate balances. Inflation, recurring costs, depreciation, repairs, and investment losses can reduce future benefits. A one-time \$1.10 payment cannot be repeated monthly unless recurring receipts or sustainable investment income support it.

Choose programs under real constraints

$$\text{Maximize } \sum \text{verified program benefit } k \times \text{selected delivery units } k \\ \sum \text{lifecycle cost } k \times \text{selected delivery units } k \leq \text{program budget}$$

Include service capacity, land rights, permitting, procurement, long-term maintenance, safety, and regional need. Minimum food, shelter, and essential-service commitments can be constraints before discretionary optimization. Benefit estimates are independently reviewed and updated from delivered outcomes. Publish allocations, actual expenditures, working infrastructure, access coverage, and maintenance performance; do not report projected social value as realized cash return.

22 Algorithm implementation and verification

Deterministic distribution procedure

1. Authenticate, authorize, acquire the profit-group lock, and load the current signed policy, parties, ownership map, capital lots, preference intervals, contribution rights, cap balances, and cleared financial inputs. Reject stale or duplicate requests.
2. Confirm permitted evidence and commercial status. Reconcile available cash and principal. Determine approved new realized profit and calculate the foundation base increment on cumulative profit. Route a negative correction to reviewed recovery rather than normal distribution.
3. Pay eligible principal. From the participant pool satisfy current investor preference and researcher priority within signed caps. Allocate residual shares, apply role and beneficial-party limits, calculate cap overflow, and assign that overflow to Intelligentsm.
4. Apply milestone holdbacks, minor-unit rounding, and any dispute holds. Check cash conservation, cap limits, priority ordering, valid percentages, and cross-party ownership. Store an immutable input hash, rights version, output lines, and independently approved batch. Confirm external settlements separately.

Required mathematical properties

Property	Verification
Conservation	Capital recovery + participant allocations + foundation + withholding equals available distribution cash.
No threshold reset	Splitting profit into positive batches leaves base foundation entitlement unchanged.
No profit cliff	Higher profit never lowers the pre-cap participant pool under marginal sharing.
Bounded gains	Every party's cumulative counted profit remains within its signed beneficial-party and role limits.
No double credit	Copies, aliases, and controlled entities cannot create duplicate research awards or restart limits.
Rights stability	New scores, templates, and optimization weights do not modify signed rights.
Safe correction	Negative adjustments freeze or recover under approved procedures without deleting prior settlements.
Technology delivery	Milestone rewards follow accepted usable delivery and maintenance evidence.

Release and optimization cycle

Pilot with fictional parties and fully disclosed numerical assumptions. Test losses, insufficient capital, zero preference, partial preference, multi-lot funding, exhausted caps, multiple roles under one owner, threshold boundaries, large profits, changed terms, rounding, and concurrency. Compare optimizer recommendations with reviewed baseline decisions; assess incentive viability and deployment outcomes before expanding its authority.

Production changes to the economic engine require versioned migrations, recorded rationale, independent review, and regression checks against signed policies. Save optimization runs, input provenance, weight versions, candidate alternatives, and the approved decision. Keep the current architecture as one CRM application with a small economic module rather than a separate financial or currency network.

23 Initial optimization policy

The initial optimizer chooses among qualified projects using transparent, adjustable numerical rules. Eligibility is a hard gate: verified technical evidence appropriate to the stage, usable rights, accountable counterparties, sufficient resources, accepted participant terms, and a costed access and maintenance plan. No score can compensate for a missing gate.

Review contributions within each role

$$\text{Research score } j = 0.35 O_j + 0.30 T_j + 0.25 M_j + 0.10 W_j$$

$$\text{Suggested within class share } j = \text{score } j / \Sigma \text{ eligible scores}$$

Each component lies between zero and one under a published rubric: O is evidenced origination, T is technical validation, M is material execution relevance, and W is accepted continuing work. The proposed weights are configurable. The score proposes shares within the research class; it does not determine the whole deal allocation. A zero score total requires negotiation rather than division by zero. Investor residual class shares can use agreed capital-days and separately verified resource credits; trader class shares use costed execution responsibilities and accepted milestones. Double-counting the same resource across these bases is blocked.

Rank qualified deployment projects

$$\text{Benefit score } k = 0.30 N_k + 0.25 A_k + 0.20 E_k + 0.15 M_k + 0.10 R_k$$

All measures are normalized from zero to one against preapproved reference benchmarks. N measures the documented unmet service need, A the incremental usable access, E the expected improvement in service outcomes, M the funded ability to operate and maintain the deployment, and R delivery readiness. Independent evidence supplies low, central, and high estimates. Use conservative verified estimates for initial allocation. Scores compare proposals in the same service category and budget horizon; they are not rankings of people or civilizations.

$$\text{Choose } x_k \in \{0, 1\}; \text{ maximize } \Sigma x_k \times \text{benefit score } k \times \text{target units } k$$

$$\Sigma x_k \times \text{lifecycle project cost } k \leq \text{available program budget}$$

Add minimum essential-service commitments, regional coverage requirements, resource capacity, and maintenance funding as explicit constraints. Target units must have a consistent definition within the category. Use separate categories or an approved conversion to service value before comparing gardens, homes, tunnels, and hospitals. Log rejected feasible alternatives and the reason for each binding constraint.

Keep incentives after approaching a cap

Before signing, reserve sufficient profit-cap headroom for the agreed delivery and maintenance rewards, and fund legitimate operating costs. If a party has exhausted its reward capacity, do not assume it will continue unlimited work without an agreed arrangement. Complete the contracted scope, use the reserved milestone reward, or appoint a new approved operator through a transparent handoff. A genuinely new opportunity may use a new profit group; artificial splitting of the same commercialization chain remains prohibited. A separate platform-wide annual or lifetime cap is a policy option, not implied by a deal-level cap.

24 Companion model and future extensions

What the editable workbook implements

Worksheet	Function
Deal Model	Final cash settlement, adjustable threshold and foundation rate, priorities, residual shares, and caps for three distinct parties.
Capital	Non-overlapping capital intervals, simple ACT/365 preferred-return accrual, and principal obligations.
Foundation	Program shares, reserve and reinvestment controls, cash benefit calculation, and units funded.
Source Example	Exact reconciliation of the four published profit rows and source budget assumptions.

Blue cells are editable assumptions. Calculated outputs update from formulas. The model uses USD and a final settlement cutoff; it does not initiate payments, replace signed rights, or automate interim ledger corrections. A production cap is per beneficial party, while the model represents one trader, one investor, and one researcher with different owners. Zero remaining cap is valid; a missing input is not treated as a zero promise.

Google Sheets handoff

The XLSX formulas use ordinary arithmetic, SUM, MIN, MAX, IF, ROUND, and COUNT, with no macros or external workbook references. Import and verify them in Google Sheets before adopting a native template. The website records spreadsheet identity, template version, imported input snapshot, finance approval, and calculation hash. Every import is revalidated and recomputed by the server economic engine.

Later Intelligentism research modules

The source describes adaptive resource valuation and energy-denominated money. Keep these separate from settlement in the first release. An energy account would require measured deliverable energy, units, conversion losses, reserve ownership, redemption terms, and audited coverage. Use joules or kWh with explicit conversions; one erg equals 10 to the minus seventh joule. A monetary claim of \$1 redeemable for \$1 of energy requires a priced delivery contract, not merely an algorithmic label.

Optional future models can explore cost-based resource prices, verified scarce capacity, reinvestment policy, or community benefits. They remain simulations until the asset backing, market design, jurisdictional requirements, and operating counterparties are defined. ExoTrade can deliver capped incentives and technology access without launching a currency, citizen banking system, or automatic society-wide valuation.

Core operational result

The algorithm rewards accountable contributors within explicit limits, protects agreed investor and researcher priority, channels excess profit to Intelligentism, and measures technology delivery through usable access. Optimization improves decisions within that structure. It does not create legal rights, verify reported civilizations, guarantee investment returns, or establish fair values without evidence and governance.

25 Source references

Intelligentism is the policy reference. ExoTrade formulas, caps, implementation rules, and optimization objectives are proposed operating decisions. Integration documentation supports the technical choices.

1 Lovable Supabase integration

Documents connecting an owned Supabase project for database, storage, and server functions.

<https://docs.lovable.dev/integrations/supabase>

2 Auth0 API token validation

Documents validation of API token signatures, audience, claims, and required scopes.

<https://auth0.com/docs/secure/tokens/access-tokens/validate-access-tokens>

3 Supabase Auth0 third party integration

Documents the supported integration and its current ID-token custom role-claim requirement. Recheck before implementing a direct browser connection.

<https://supabase.com/docs/guides/auth/third-party/auth0>

4 Google Sheets authorization scopes

Explains available scopes and file-level rather than individual-tab authorization.

<https://developers.google.com/workspace/sheets/api/scopes>

5 IRS private foundation self dealing

Explains restricted transactions involving foundations and disqualified persons, including indirect self-dealing.

<https://www.irs.gov/charities-non-profits/private-foundations/acts-of-self-dealing-by-private-foundation>

6 Supreme Court investment contract decision

SEC v W J Howey Co, 328 US 293. Primary decision concerning investment contracts; application depends on the actual transaction.

<https://tile.loc.gov/storage-services/service/ll/usrep/usrep328/usrep328293/usrep328293.pdf>

7 SEC broker dealers and capital raising

Explains that transaction-related compensation for capital raising and other transactions can require broker-dealer registration.

<https://www.sec.gov/resources-small-businesses/capital-raising-building-blocks/broker-dealers>

8 Intelligentism policy and embedded illustration

The requested page and its embedded profit and Earth Budget illustration were read on October 4 2026 UTC. Published rows are reproduced as source scenarios; proposed marginal policies and profit caps are distinguished from that illustration.

<https://blog.isilp.org/intelligentism/>

Illustration <https://blog.isilp.org/wp-content/uploads/sites/6/2025/04/Intelligentism.png>

26 Phase 1 release scope

The first release establishes the infrastructure for participation. It includes a cinematic public website, Auth0 accounts, role applications, manual identity and organization review, project workspaces, research evidence, recruitment, protected communication, administration, and a draft economic calculator. This release scope takes precedence over references to later settlement operations elsewhere in the architecture.

Enabled now	Deferred until the financial release
Applications and nonbinding investor interest	Funding commitments and investment subscriptions
Projects, tasks, milestones, research and contacts	Collection, custody, wallets and payment gateways
Paid, volunteer and profit participation listings	Payroll, invoices and compensation disbursement
Draft deals, proposed rights and economic previews	Live signing, settlement approval and transfers
Project permissions and versioned API contracts	External integration grants until scope checks pass

Role approval and engagement type

A role describes what someone can contribute. An engagement describes the arrangement for a particular assignment. Trader and researcher applications have no investment minimum; adults can apply as individuals or authorized organization representatives. Accepted members may propose their own projects, apply for paid work, volunteer, or negotiate future profit participation. Approval does not create a job, compensation claim, or automatic project membership.

Investor applications require proposed investment capacity of at least USD 1,000,000, checked by the server as well as the form. Phase 1 records nonbinding interest and supporting review evidence without accepting money or requesting bank credentials. Resource contributions can be recorded separately; tools or volunteer time do not automatically satisfy the investor capital minimum.

Auth0 and configuration

Auth0 is the only login provider. The server validates access-token signature, issuer, audience, and expiry, then resolves the account and current permissions. Application review is independent of login. The build supplies configuration fields for domain, client ID, and API audience, plus exact callback, logout, and origin settings for the final app URLs. Admins and reviewers use MFA.

Until Auth0 and the private backend are configured and verified, private operations fail closed. A separate demonstration workspace may illustrate the product with conspicuously fictional records and no ID upload. Demonstration data must never be promoted to genuine evidence or confused with persisted production records.

27 Manual identity and background review

Applicants provide the information needed for their selected roles and consent to identity review and relevant background research. Government photo ID uploads are restricted to the applicant and designated identity reviewers. Corporate applications additionally require organization registry information, beneficial ownership, and authority for the representative to act.

Research case and workflow

Submission creates a review case and a checklist of identity, authority, reference, professional, regulatory, and relevant court-record tasks. Review proceeds through consent check, identity review, research in progress, clarification needed, review ready, and a reasoned decision. The system organizes source tasks, findings, requests, responses, and audit events. Phase 1 research is conducted manually through accessible official sources; an automated search adapter is a separate future integration.

Finding field	Why it is required
Source and retrieval time	Link or document, jurisdiction, court or agency, and date checked.
Identity corroboration	Identifiers beyond the name; a possible match stays unresolved.
Record status	Separate allegations, charges, convictions, dismissals and other dispositions.
Coverage and limitations	Sources actually searched, dates, inaccessible jurisdictions and gaps.
Role relevance and response	Reason for considering the record and the applicant correction or explanation.

No search results means only that the stated search found no records. It is not a criminal-background clearance. Reviewers investigate possible matches, use role-relevant evidence, and support correction and appeal. Neither the system nor an AI summary makes a final approval or criminality determination.

Private documents and applicant rights

Use a separate private ID bucket, signature and MIME validation, a 10 MB limit for PNG, JPEG or PDF, safe processing, and quarantine before reviewer access. Signed download URLs are short lived and issued only after a current permission check. IDs, exact dates of birth, document numbers and home addresses are excluded from public search, project records, messages, logs, and external research queries. Admins set retention periods; expiry and deletion create audit events.

Paid employment screening has a separate status and jurisdiction-specific policy. Review timing, consent, notices, record relevance and correction procedures must match that use. FTC guidance addresses consumer-report requirements, and EEOC guidance distinguishes arrests from convictions and calls for relevance to the job [9, 10]. No blanket criminal-record exclusion or automated adverse decision is built into role approval.

[9] <https://www.ftc.gov/business-guidance/resources/background-checks-what-employers-need-know>

[10] <https://www.eeoc.gov/employers/small-business/criminal-records>

28 Projects recruitment and contributions

A verified member creates a draft project with a purpose, category, accountable lead, owner party, readiness, location or remote arrangements, jurisdictions, needs, and proposed milestones. An administrator reviews it before discovery or recruitment. Public summaries are sanitized; community and project materials retain their own permissions.

Project workspace

The workspace includes overview, tasks, milestones, opportunities, research, technologies, contacts, team, recruitment, documents, discussions, draft deals, draft economics, and activity. Leads invite approved parties and grant explicit permissions. An invitation does not substitute for role approval. Revocation or suspension stops new private access without erasing authorship or recorded rights.

Engagement	Required explanation in each opening
Paid employment	Hiring entity, pay range and currency, duties, location, hours, funded or planned status.
Paid contract	Contracting entity, deliverables, budget or rate, duration and acceptance conditions.
Volunteer	Voluntary scope, expected time, expenses if any, and no implied wage or profit promise.
Profit participation	Proposed contribution rights, limits and dependencies; no guaranteed income.
Founder led project	Applicant leads their own approved project and recruits appropriate collaborators.

Openings may combine arrangements if each component is explicit. A potential profit share does not substitute for a promised wage. Planned hiring is labeled planned; an approved application is not a job offer. Project-specific agreement acceptance records the terms version and parties, while the platform financial signing and payment workflow remains deferred.

Research and rights

Research records preserve source links, evidence versions, author, beneficiary, permissions and contribution claims. Accepted origination or material-contribution claims are linked to a draft deal or defined profit group. A lead and independent reviewer resolve claims; copied work cannot create duplicate credit. Evidence readiness and rights authority remain separate from counterparty classification.

Project discovery

Build a projects directory with filters for category, readiness, location, remote work, available roles, engagement type and funding status. Only approved public summaries appear anonymously. The homepage project section is controlled by an admin flag that is initially off. When enabled, cards show real approved openings and a Join a project action; no fictional opportunity appears as a live offer.

29 Communication and administration

Phase 1 uses native protected messaging to keep work attached to projects. Project channels support discussions, replies, mentions, attachments and unread counts. Direct and small-group conversations support coordination among approved participants. Messages have pending, sent and failed states and clear retry behavior; no fabricated successful delivery is displayed.

Membership and retention

Every read, write, attachment request and notification checks current conversation or project membership on the server. Realtime subscriptions must enforce the same boundary; authenticated polling is acceptable for the first release. Removing access ends private reads and subscriptions. KYC documents are never message attachments. Private direct conversations are not a general admin browsing feature; moderators can inspect reported material only under an audited review policy.

Use safe plain text or sanitized rich text, protected attachments, rate limits, reporting and blocking, revision history and tombstone deletion. Publish retention behavior. The native messaging release makes no end-to-end encryption claim. Email notifications remain disabled until delivery is configured and verified; in-app notifications work independently. TelePath OS can be evaluated as a later communication integration without blocking this release.

Administration

Area	Capabilities
Applications	Review roles, manual KYC cases, requests, evidence, decisions, expiry and appeals.
Projects and content	Approve summaries, openings and research; manage video, poster and architecture PDF.
Community	Handle reports, attribution disputes, suspensions and documented appeals.
Economics	Maintain proposed templates and inspect draft snapshots; no live settlement action.
Operations	Inspect redacted audit events, configuration health and permission failures.

Separate reviewer, moderator, project approval and configuration capabilities. A reviewer cannot approve their own application or contribution dispute. ID access is limited to designated compliance reviewers rather than all administrators. Audit history records the actor, purpose, target, time and decision without copying sensitive document or message contents.

Additional data objects

Add application consents, identity documents, review cases and tasks, background findings, review decisions, appeals, recruitment openings and applications, tasks, milestones, conversations and members, messages and revisions, read markers, reports, notifications, and public content settings. Keep the existing parties, projects, research, contributions, draft deals, economic templates and audit records. Use server validation, strict storage rules and deny-by-default access.

30 Homepage and participation copy

Video hero

Eyebrow: Technology exchange for shared progress

Headline: Build opportunities beyond familiar boundaries.

ExoTrade brings traders, researchers, and investors together to explore technology exchange opportunities involving reported extraterrestrial, Inner Earth, and interdimensional intelligences. Members organize evidence, build projects, and agree on how their work can benefit participants and the wider world.

Primary action: Apply to participate. Secondary action: Download architecture PDF.

A role for capital action and ideas

Traders source opportunities, coordinate exchanges, negotiate terms, and carry projects through testing and deployment. Apply for paid roles, volunteer assignments, profit participation, or a project you lead.

Researchers investigate opportunities, document evidence, validate technical claims, and contribute analysis from wherever they work. Research can become a paid assignment, volunteer contribution, original project, or an agreed share of a future deal.

Investors support qualified projects with capital and agreed resources. Investor participation starts at USD 1,000,000 in proposed investment capacity. Approved deal terms define capital recovery, preferred returns, and capped profit rights. Submit interest now; funding opens in a later phase.

Individuals and organizations may apply. Trader and researcher applications have no investment minimum. Roles and project access require approval. Paid work and profit participation depend on the specific assignment and agreed terms.

Earn substantial rewards and extend the benefits

ExoTrade records contributions and proposed deal rights before execution. Traders receive the largest default share of residual participant profit; investors receive agreed priority; accepted research can receive origination or material-contribution rights. The proposed model allows significant but capped gains, then directs surplus profits to Intelligentism for infrastructure, food systems, housing, and usable technology access. Economics vary by approved deal. Participation, wages, and investment returns are not guaranteed.

How participation works

Choose your role and interests, complete identity review, join or propose a project, agree on responsibilities and terms, then document and deliver the work. Every qualifying technology project defines testing, usable rights, deployment, affordability, training and maintenance. Intelligentism directs its allocations toward working infrastructure and measurable public benefit.

Visual and content requirements

Use cinematic portal or advanced-infrastructure footage with restrained white, ice blue and deep blue glass styling. Video is muted, loops inline, has a pause control and a still poster for reduced motion and loading failures. Admin settings manage the video, poster, PDF and future project section. Use licensed assets, responsive typography, keyboard access, and no invented sponsors, statistics or completed exchanges.

31 Delivery checks and release boundaries

Implement the website and collaboration infrastructure in increments, preserving the same permissions across the interface, server, database, storage, notifications and exports. The release report distinguishes working persisted features from demonstration screens, missing configuration and deferred functions.

Check	Required result
Role applications	Investor capacity below USD 1 million is rejected server-side; other roles have no minimum.
Private review	Applicants cannot access another case; project leads cannot see IDs or background records.
Approval authority	Self approval and forged client roles are rejected by the server.
Project membership	Nonmembers and suspended users cannot read private records, messages or files.
Communication	Duplicate send retries do not create duplicate messages; revoked access stops updates.
Recruitment	Paid and volunteer terms, funding status and proposed profit rights are distinguishable.
Economics	Preview results reconcile, enforce caps and remain disconnected from live payments.
Public website	Video fallback and pause work; architecture PDF downloads; public summaries are sanitized.
Operations	Secrets stay on the server; restore procedure, redacted audit and retention are verified.

Configuration required before live applications

Auth0 tenant and application configuration, the private database and storage, reviewer accounts, upload safety processing, retention settings and jurisdiction-specific review policy must be ready before accepting actual photo IDs. In the absence of these dependencies, the public information pages can operate and an isolated demo can illustrate the product, while live sensitive submissions remain unavailable.

Financial release comes last

Later work activates approved commercial agreements, funding, settlement, payroll or contractor payments as applicable, and foundation transfers. That release requires its own reconciled ledger, provider selection, operating documents, staff approvals and verification. The current economic algorithm remains the reference for future implementation and a planning tool in Phase 1.