

ironRelay DAO Constitution (Updated Draft)

“We, the participants of the ironRelay, a Decentralized Commodity Settlement Network (DCSN), establish this Constitution to ensure the fair, transparent, and resilient governance of a global, open-source, crypto-settled commodity infrastructure.”

Preamble

We, the participants of the ironRelay, a Decentralized Commodity Settlement Network (DCSN), establish this Constitution to ensure the fair, transparent, and resilient governance of a global, open-source, crypto-settled commodity infrastructure.

Our purpose is to maintain an indestructible supply chain capable of operating even when traditional systems fail.

We commit to decentralization, neutrality, transparency, and the protection of essential human needs.

Article I - Mission

The mission of the ironRelay DAO is to:

1. Govern the ironRelay protocol in a decentralized, transparent manner.
2. Ensure the continuous movement of essential goods globally.
3. Maintain a censorship-resistant, open-source commodity settlement network.
4. Protect the economic resilience of communities worldwide.
5. Prevent corporate or governmental capture of the protocol.
6. Provide a decentralized fallback settlement rail that functions when traditional systems fail.
7. Enable small producers, independent carriers, and underserved participants to access tools previously reserved for large institutions.
8. Integrate seamlessly with existing supply chain infrastructure as a compatibility layer, not a competitor.
9. Ensure that commodity settlement, logistics coordination, and emergency routing remain neutral, permissionless, and globally accessible.

The DAO exists to serve the network, not to profit from it.

Article II - Authority

The DAO governs:

- protocol upgrades
- incentive structures
- role approvals
- treasury allocations
- emergency routing rules
- dispute resolution
- node standards
- verification requirements

The DAO does not:

- operate as a corporation
- provide financial guarantees
- act as a custodian
- control individual nodes
- interfere with free market activity

The DAO's authority is limited to the protocol itself.

Article III - Identity & Membership (Revised)

Section 1 - Identity Credential

Membership in ironRelay requires passing the Competency Gate, which issues a

non-transferable, cryptographic uniqueness credential.

This credential verifies that each participant is a single human, without revealing personal identity.

The DAO verifies uniqueness, not identity.

Section 2 - One Human, One Identity Slot

Each credential represents one governance identity.

A member may not create multiple identities, transfer their credential, or delegate governance rights.

Section 3 - Membership Rights

Members with a valid credential may:

- submit proposals
- vote on governance matters
- hold operational roles
- participate in committees
- access member-only communication channels

Section 4 - Membership Responsibilities

Members must:

- uphold network neutrality
- avoid malicious activity
- maintain operational integrity if holding a role
- participate in governance in good faith

Section 5 - Revocation & Re-Certification

The DAO may revoke a credential for:

- fraud
- Sybil behavior
- malicious activity
- repeated protocol violations

Revoked members may not re-enter the system by retaking the Competency Gate.

Section 6 - Privacy Guarantees

ironRelay does not collect:

- personal identity data
- biometrics
- government IDs
- location data

The uniqueness credential contains no personally identifiable information.

Members may participate pseudonymously.

Article IV - Governance Rights & Legislative Structure (Revised)

Section 1 - Bicameral Legislature

The ironRelay DAO operates a bicameral legislative system consisting of:

1. The Congress (House of Representatives)

- composed of members holding a valid, non-transferable ERC-1155 Competency Credential
- each credential grants one vote
- credentials may be transferred only peer-to-peer between individuals who have passed the Competency Gate

2. The Senate (Chamber of Contributors)

- composed of holders of the ERC-20 Contributor Token
- tokens are freely transferable and may be sold on open markets
- the DAO Treasury may not sell tokens; it may only distribute them to contributors

Both chambers form the Legislative Branch.

Section 2 - Introduction of Bills

Any member of the Congress or Senate may introduce a bill.

A bill must include:

- proposed text
- rationale
- expected impact
- implementation requirements

All bills are routed to the appropriate Committee for review.

Section 3 - Committee Review

Committees may:

- amend the bill
- request audits or analysis
- merge similar proposals
- reject the bill
- advance the bill to Congress

A bill may not proceed without Committee approval.

Section 4 - Congressional Vote (House of Representatives)

The Congress votes first.

A bill passes the Congress with:

- a simple majority of participating identities
- quorum requirements defined by governance

If the Congress rejects the bill, it dies.

Section 5 - Senate Vote (Chamber of Contributors)

If the Congress approves the bill, it proceeds to the Senate.

A bill passes the Senate with:

- a simple majority of token-weighted votes
- quorum requirements defined by governance

If the Senate rejects the bill, it dies.

Section 6 - Concurrence

A bill becomes eligible for Executive Review only if:

- the Congress approves the bill, and
- the Senate approves the bill, and
- both chambers approve identical text

If either chamber amends the bill, it returns to Committee for reconciliation.

Section 7 - Identity-Bound Governance (Congress)

Congressional governance rights remain bound to the ERC-1155 credential and are:

- non-transferable except peer-to-peer
- non-delegable
- non-fractionalizable

Section 8 - Senate Governance

Senate voting rights are proportional to ERC-20 token holdings.

Section 9 - Governance Cap

No identity in the Congress may hold more than 1% of total congressional voting power without explicit DAO approval.

Section 10 - Wallet Association

Members may associate multiple wallets with their identity credential. Wallets do not grant governance power; they merely serve as interfaces for participation.

Article V - Roles & Permissions

Section 1 - Role Assignment

Roles within ironRelay are assigned to identity credentials, not wallets.

A member may hold only one operational role at a time unless explicitly approved by the DAO.

Roles include:

- Farmers
- Processors
- Refiners
- Warehouses
- Transporters
- Auditors
- Brokers
- Validators
- Operators

- Committee Members

Roles are privileges, not rights.

Section 2 - Eligibility Requirements

To hold a role, a member must:

- possess a valid uniqueness credential
- meet role-specific qualifications (licenses, certifications, proof of operation, etc.)
- comply with node standards
- maintain operational reliability
- adhere to safety and neutrality protocols

General governance competency tests do not apply to operational roles.

Section 3 - Role Powers

Role holders may:

- execute protocol-defined responsibilities
- submit operational reports
- access role-specific dashboards
- receive incentives tied to performance
- participate in committees relevant to their role

Role powers do not grant additional governance rights.

Section 4 - Role Revocation

Roles may be revoked for:

- fraud
- repeated delivery failures
- malicious activity

- safety violations
- protocol manipulation
- identity revocation

Revocation removes operational authority but does not automatically remove membership unless the identity itself is revoked.

Section 5 - Role Transparency

All role assignments, revocations, and performance metrics are public and immutable.

(Note: the previous “immediate freeze” and DAO-vote fraud adjudication language is now superseded by the Judicial Branch in Article V-B.)

Article V-A - Executive Branch & Veto Powers

Section 1 - Executive Authority

The Executive Branch consists of:

- the ironRelay Foundation (initially)
- active node operators (once operational)

The Executive Branch executes laws passed by the Legislature and ensures operational feasibility.

Section 2 - Executive Review Timelock

All bills approved by both chambers enter a 7-day Executive Review Timelock.

During this period, the Executive Branch may:

- approve the bill
- take no action
- veto the bill

If no action is taken within 7 days, the bill becomes law.

Section 3 - Executive Veto

The Executive Branch may veto a bill by:

- issuing a formal veto message
- recording the veto on-chain

A veto returns the bill to the Legislature.

Section 4 - Node Operator Veto (Physical Software Veto)

Active node operators may signal rejection through their node client.

If 66% of active nodes reject the bill during the timelock:

- the bill is vetoed
- the veto is final
- the bill cannot be revived

This protects the physical network from unsafe or unworkable laws.

Section 5 - Legislative Override

If the Executive Branch vetoes a bill, the Legislature may override the veto.

A veto is overridden if:

- 2/3 of Congress approves the bill, and
- 2/3 of the Senate approves the bill

If both chambers reach the override threshold, the bill becomes law despite the veto.

Article V-B - Judicial Branch & Fraud Adjudication

Section 1 - Judicial Authority

The Judicial Branch evaluates:

- fraud accusations
- constitutional violations
- disputes involving node operators
- challenges to legislative actions
- violations of contract rules or free-market principles

Section 2 - Optimistic Oracle Court

All accusations are routed to the Optimistic Oracle Court, composed of:

- randomly drafted cryptographic jurors
- drawn from a global pool of qualified identities
- incentivized through rewards and slashing

Section 3 - Probable Cause Review

Upon receiving an accusation:

- no automatic freeze occurs
- jurors have 48 hours to evaluate evidence, including:
 - GPS logs
 - IoT telemetry
 - delivery trails
 - on-chain data
 - contract rules
 - constitutional provisions

If jurors determine probable cause, a temporary freeze is applied to the accused identity and any associated roles.

If not, the accusation is dismissed.

Section 4 - Final Ruling

If found guilty:

- the identity credential is revoked
- governance rights are burned
- all roles are removed
- the accuser receives a reward
- the revoked identity may not re-enter the system

If found innocent:

- all rights and roles are restored
- malicious accusers may be penalized

All rulings are permanently recorded on-chain.

Article VI - Treasury

Section 1 - Purpose

The ironRelay Treasury exists to support the long-term resilience, neutrality, and development of the protocol.

Funds are used strictly for network-aligned purposes.

Section 2 - Authorized Expenditures

Treasury funds may be allocated to:

- protocol development
- audits and security reviews
- grants and research

- infrastructure and tooling
- emergency routing incentives
- education and documentation
- operational committees
- public goods that strengthen the network

Section 3 - Prohibited Expenditures

Treasury funds may not be used for:

- personal enrichment
- political activity
- corporate lobbying
- unrelated ventures
- private bailouts
- discretionary payments to individuals

Section 4 - Spending Structure

Treasury spending is divided into two categories:

Routine Expenditures

- Executed by DAO-approved committees or operators within predefined budgets.
 1. · Covers recurring or operational costs below a defined threshold.

Major Allocations

- Require an on-chain proposal and DAO vote.
 2. · Covers large grants, new programs, long-term commitments, or expenditures above the defined threshold.

Thresholds are set and updated by governance.

Section 5 - Transparency

All treasury balances, inflows, outflows, and allocations are:

- public
- immutable
- auditable
- permanently recorded on-chain

No off-chain treasury management is permitted.

Section 6 - Emergency Funding

During approved emergency periods, the DAO may authorize:

- temporary incentive increases
- routing subsidies
- operational grants
- rapid-deployment funds

Emergency allocations expire automatically unless renewed by vote.

Section 7 - Treasury Security

The treasury is secured by:

- multi-sig or threshold signatures
- DAO-approved key holders
- automated safeguards
- slashing conditions for misuse

Key holders execute the will of the DAO and have no discretionary authority.

Section 8 - Dissolution of Treasury

If the DAO dissolves:

- all remaining funds must be allocated to public goods
- no funds may be distributed to members
- no funds may be claimed by the Foundation
- dissolution requires a 3/4 majority vote

Article VII - Emergency Powers (Final Version)

(Unchanged in thesis; kept as-is.)

Section 1 - Definition of Emergency

An emergency may be declared when the network faces:

- supply chain collapse
- regional instability
- natural disaster
- systemic failure
- critical backlog of essential goods
- protocol-level malfunction
- verified security threat

An emergency is a temporary condition requiring rapid, coordinated action.

Section 2 - Declaration of Emergency

An emergency may be declared by:

- a DAO vote
- an automated protocol trigger
- a committee authorized for emergency response

All declarations must specify:

- the affected region or system
- the nature of the disruption
- the expected duration
- the actions being authorized

Section 3 - Emergency Powers Granted

During an active emergency, the DAO may authorize:

- increased incentives
- rerouting of deliveries
- transport subsidies
- priority handling of essential commodities
- temporary operational grants
- rapid-deployment funds
- activation of backup nodes
- temporary override of non-critical protocol rules

Emergency powers apply only to the affected region or system.

Section 4 - Limits on Emergency Powers

Emergency powers:

- do not grant permanent authority
- do not modify governance rights
- do not bypass identity rules
- do not allow treasury spending beyond approved emergency budgets
- do not permit censorship or political influence

All actions must be logged and publicly visible.

Section 5 - Duration

Emergency powers expire automatically after 14 days unless renewed by a DAO vote.

Automated triggers may end an emergency early if conditions stabilize.

Section 6 - Post-Emergency Review

After an emergency ends, the DAO conducts a mandatory review covering:

- actions taken
- funds spent
- performance of nodes
- failures or bottlenecks
- recommended protocol improvements

Findings are recorded permanently.

Section 7 - Abuse of Emergency Powers

Any identity that:

- fabricates emergencies
- exploits emergency conditions
- misuses emergency funds
- manipulates routing for personal gain

may be subject to:

- identity freeze
- role revocation
- slashing
- permanent removal from the network

Article VIII - Foundation (Corrected)

(Unchanged in thesis; kept as-is.)

Section 1 - Purpose

The ironRelay Foundation exists solely to support the ironRelay protocol and its decentralized governance.

It provides legal, administrative, and operational services that cannot be executed on-chain.

Section 2 - Authorized Functions

The Foundation may:

- interface with regulators
- manage trademarks and branding
- sign contracts on behalf of the DAO
- receive grants or donations
- hire developers or auditors
- maintain documentation
- operate public communication channels
- support DAO-approved initiatives

Section 3 - Limitations

The Foundation:

- does not control the protocol
- does not control governance
- does not manage the treasury
- does not set policy

- does not override DAO decisions

The Foundation executes the will of the DAO and nothing more.

Section 4 - Accountability

The Foundation must:

- publish quarterly reports
- disclose all expenditures
- maintain transparent operations
- comply with DAO oversight

Failure to comply may result in:

- replacement of directors
- restructuring
- dissolution by DAO vote

Section 5 - Dissolution

The Foundation may be dissolved if:

- the protocol is fully decentralized
- legal support is no longer required
- DAO governance determines it is obsolete

Upon dissolution, all Foundation assets must be transferred to the DAO or allocated to public goods.

Article IX - Amendments

Section 1 - Amendment Authority

The ironRelay Constitution may be amended only through a formal governance process.

Amendments modify constitutional structure, not operational rules.

Section 2 - Proposal Requirements

An amendment proposal must include:

- the exact constitutional text to be added, removed, or modified
- the rationale
- the expected impact
- any required implementation steps
- a minimum 7-day review period before voting

Section 3 - Voting Requirements

An amendment requires:

- a 2/3 majority vote
- a minimum quorum of 15% of total governance power
- a 7-day voting window

No amendment may pass without meeting all three conditions.

Section 4 - Protected Principles

No amendment may violate or remove the following core principles:

- decentralization
- neutrality
- open access
- resilience
- censorship resistance
- identity uniqueness
- non-transferable governance rights

Any proposal conflicting with these principles is automatically invalid.

Section 5 - Implementation

If an amendment passes:

- the updated text becomes effective immediately
- all protocol components must align with the new constitutional language
- committees and operators must update procedures accordingly

Section 6 - Emergency Amendments

Emergency amendments may be proposed only during an active emergency period.

They require:

- a 3/4 majority vote
- a minimum quorum of 20%
- a 3-day review period

Emergency amendments expire after 90 days unless reaffirmed through the standard amendment process.

Section 7 - Historical Record

All amendments, including rejected proposals, are permanently recorded on-chain.

Section 8 - Constitutional Review

Any member of the Congress may file a Constitutional Challenge if they believe a bill or protocol upgrade violates the Protected Principles in Section 4. Challenges are routed to the Optimistic Oracle Court for a 48-hour probable cause review.

If probable cause is found, the entire Congress is called to order to act as the Supreme Court. The challenged bill or protocol upgrade is permanently struck down and invalidated if: > · 75% of Congress votes that it violates the Constitution. >

This ruling is final and permanently recorded on-chain.

- 75% of Congress votes that it violates the Constitution

This ruling is final and permanently recorded on-chain.

Article X - Dissolution

Section 1 - Conditions for Dissolution

The ironRelay DAO may dissolve only if all of the following conditions are met:

- the protocol is fully decentralized
- the Foundation is no longer required
- all critical infrastructure is self-sustaining
- no single entity holds operational control
- all treasury funds have been allocated to public goods

Dissolution is a last-resort action.

Section 2 - Proposal Requirements

A dissolution proposal must include:

- justification for dissolution
- verification that all conditions have been met
- a complete transition plan
- final treasury allocation details
- a timeline for shutdown

A minimum 14-day review period is required before voting.

Section 3 - Voting Requirements

Dissolution requires:

- a 3/4 majority vote
- a minimum quorum of 20%
- a 7-day voting window

No exceptions.

Section 4 - Treasury Distribution

Upon dissolution:

- all remaining treasury funds must be allocated to public goods
- no funds may be distributed to members
- no funds may be claimed by the Foundation
- no private entity may receive preferential treatment

Section 5 - Post-Dissolution Role Approvals

Upon dissolution of the DAO, all role approvals transition to protocol-level rules.

Roles are authorized through:

- identity-bound credentials
- cryptographic qualification proofs
- reputation history
- collateral or bonding requirements

No governance body, committee, or organization shall be required to approve participation.

Role eligibility becomes fully automated, neutral, and self-sustaining, ensuring the network continues operating without centralized authority.

All allocations must be executed on-chain.

Section 6 - Foundation Wind-Down

If the Foundation exists at the time of dissolution:

- all contracts must be closed
- all assets must be transferred to the DAO or public goods
- all legal obligations must be resolved
- all documentation must be archived publicly

The Foundation ceases operations once all obligations are complete.

Section 7 - Protocol Continuity

Dissolution of the DAO does not imply shutdown of the protocol.

If the protocol is fully decentralized:

- it continues operating autonomously
- nodes remain free to participate
- markets remain open
- routing and settlement continue without governance

The DAO dissolves; the network persists.