KRYONIS SOVEREIGN SYSTEMS LIMITED

$BCCS

Biological Computing Control Standard

Tokenomics Litepaper v2.0

Verification Unit Economy, Infrastructure Access, and Protocol Mechanics

Network: Base (Coinbase L2) | Unit: $BCCS | Standard: ERC-20

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“Value is not created. It is measured at the point where biology meets verification.”

1. The Verification Gap

In the expanding agentic economy, AI agents possess autonomous financial identities, wallets, and the authorization to execute complex transactions at machine speed. Operating on networks like Base, these agents manage significant digital asset flows daily.

A critical structural void remains: autonomous systems cannot natively verify or price physical, thermodynamic reality. When an AI agent attempts to transact against biological capital — a forest carbon system, a permafrost reserve, an agricultural yield — it encounters what BCCS defines as the Verification Gap.

Unlike digital assets, biological assets are governed by entropy. Forests burn, soil degrades, ecosystems collapse. Current financial infrastructure relies on static, human-audited certificates that become factually obsolete the moment biological conditions shift. For autonomous agents operating at machine speed, this is architecturally incompatible.

If autonomous agents cannot cryptographically verify the real-time physical state of biological systems, the multi-trillion-dollar bioeconomy remains inaccessible to the agentic financial system. BCCS addresses this through the BAIN ID standard and the 8-State Verification Engine. But a standard alone cannot enforce truth without centralized corruption. This is the function of $BCCS.

2. BAIN ID: The Biological Asset Identity

Every biological asset in the BCCS network receives a BAIN ID — a 21-character immutable identifier that encodes asset type, jurisdiction, classification, and registration sequence. The BAIN ID is the protocol's atomic unit of truth — a protocol-level reference key whose on-chain registry entry on Base serves as its cryptographic anchor.

2.1 The 8-State Lifecycle Model

Each BAIN ID moves through an 8-state lifecycle that captures the full thermodynamic journey:

State	Trigger	Description
Registered	Node enrollment	Asset identified and BAIN ID assigned on-chain
Active	First verification	Node live, producing attestation data via PoPS consensus
Suspended	Anomaly detected	Temporary halt pending investigation or recalibration
Migrating	Spatial operation	Asset in physical transition between jurisdictions (Split/Merge)
Dormant	Seasonal cycle	Natural low-activity period (e.g. winter permafrost)
Degraded	Threshold breach	Below minimum viability; recovery protocol initiated
Depleted	Terminal state	Irrecoverable biological destruction; archived on-chain
Archived	Protocol exit	Clean exit; historical data preserved immutably

Every state transition requires cryptographic attestation through the Proof-of-Physical-State consensus mechanism, backed by staked $BCCS.

3. Verification Unit Utility: The Economic Engine of Truth

$BCCS is the protocol-native verification unit powering oracle surety, truth enforcement, and deflationary value capture. It serves as the mathematical foundation of the protocol's trust model through three critical functions:

3A. Cryptographic Surety (Oracle Staking)

To participate as an accredited oracle, institutions must stake $BCCS into a Base smart contract. This stake represents executable economic alignment. An oracle cannot submit a state-transition request without locking capital that backs the claim. As biological registries adopt BCCS, substantial quantities of $BCCS supply are structurally locked out of circulation.

3B. Truth Enforcement (Algorithmic Slashing)

If the decentralized validator network detects a material discrepancy in an oracle's claim, a challenge is initiated. If proven fraudulent, the oracle's staked $BCCS is slashed — permanently burned. False data submission carries an immediate, irreversible economic penalty.

3C. Query Settlement and Programmatic Demand

Every AI agent query, spatial operation, and policy verification settles via standard stablecoin rails (USDC). This removes friction for autonomous agents already operating on Base. A programmatic portion of each USDC fee is routed to acquire $BCCS from the open market and distribute to active validators, creating continuous demand that scales linearly with the growth of machine-to-machine biological verification.

4. DePIN Security Layer: Proof-of-Physical-State (PoPS)

BCCS employs a Decentralized Physical Infrastructure Network (DePIN) consensus layer. Validator nodes are lightweight software clients operated by a decentralized global community. When an oracle submits a BAIN ID state transition, the validator network algorithmically cross-references the claim against multi-source data: satellite imagery, synthetic aperture radar, IoT sensor networks, and independent verification streams.

4.1 Validator Node Economics

Protocol emissions: 45% of total $BCCS supply emitted to active validator nodes over a 6-year halving schedule. Query fee distribution: AI agents pay USDC query fees via standard rails; a programmatic portion is used for $BCCS buy-and-distribute to active validators. Slashing bounties: when a fraudulent oracle is penalized, a portion of slashed $BCCS stake is redistributed to the validators that detected the anomaly.

5. Infrastructure Access Licenses

An Infrastructure Access License is a non-transferable software permit issued as an ERC-721 credential on Base. Participation in network verification requires holding a valid license. By issuing software permits rather than conducting a sale of verification units, KRYONIS maintains regulatory clarity while enabling community operation of foundational infrastructure.

5.1 Tiered Structure

Tier	Licenses	Price (USDC)	Description	Cumulative
Alpha	500	$1,000	Whitelisted infrastructure operators	$500K
Beta	1,000	$1,500	Expanded operator cohort	$2.0M

Gamma	2,000	$2,200	DePIN infrastructure participants	$6.4M
Delta	3,000	$3,000	Global verification network	$15.4M
Epsilon	5,000	$3,500	Full network coverage	$32.9M

License holders acquire the right to operate infrastructure that produces verified biological data. The $BCCS verification units earned per license are protocol emissions through active participation, not financial returns guaranteed by acquisition. No $BCCS allocation is included with license activation.

6. Supply, Distribution, and Vesting

6.1 Specifications

Verification unit: $BCCS. Network: Base (Coinbase L2 Ethereum Rollup). Standard: ERC-20. Maximum fixed supply: 1,000,000,000 (1 billion). Hard-capped — no further $BCCS can ever be minted. Deflationary mechanics active through oracle slashing burns and programmatic USDC-to-$BCCS buy-and-distribute from query revenue.

6.2 Distribution

Allocation	Share	Amount	Purpose
Validator Emissions	45%	450,000,000	Primary DePIN security budget. Emitted algorithmically via PoPS consensus.
Ecosystem & Oracle	20%	200,000,000	Oracle onboarding subsidies. Zero-friction institutional participation.
Core Team	15%	150,000,000	Long-term alignment for protocol architects.
Strategic Backers	12%	120,000,000	Infrastructure partners providing capital and network access.
Liquidity	8%	80,000,000	DEX liquidity and verification query facilitation.

6.3 Vesting Schedules

Strict cryptographic time-locks enforced via Base smart contracts:

Allocation	Cliff	Vesting
Core Team (15%)	12 months	Linear daily vesting over 36 months (4 years total)
Strategic Backers (12%)	6 months	Linear daily vesting over 24 months
Validator Emissions (45%)	No cliff	6-year halving schedule. Early operators earn exponentially more.
Ecosystem Grants (20%)	Milestone	10% at TGE for immediate oracle onboarding. 90% milestone-locked.
Liquidity (8%)	None	100% at TGE. Required for protocol query settlement.

7. Deflationary Equilibrium

$BCCS is designed to become structurally deflationary as the verification network scales, through a triple-sink mechanism:

The Staking Lock: As more biological assets are registered, oracles must acquire and lock increasing quantities of $BCCS to maintain their security collateral. The Slashing Burn: Verification units slashed from false oracle submissions are permanently burned, reducing total circulating supply. The Buy-and-Distribute: As AI agents consume the BCCS API and pay USDC query fees, a programmatic portion acquires $BCCS from the open market and distributes to active validators.

The protocol targets Deflationary Equilibrium: the point at which daily agentic demand for $BCCS permanently exceeds algorithmic daily emissions to validator nodes. At this inflection, BCCS becomes a self-sustaining verification standard for biological capital.

8. Protocol Phases

Development follows a phase-gated model. Each phase transitions when measurable criteria are met — not by calendar date:

Phase	Milestones
Foundation	Protocol specification finalized. BAIN ID standard published. Legal structuring. Base testnet deployed. Waitlist opens.
Mainnet Deploy	ERC-20 and ERC-721 deployed on Base. Source verified on BaseScan. Treasury mint to Safe multisig.
Community Build	Alpha and Beta tier Infrastructure Access Licenses available to whitelisted operators.
Verification Network	PoPS consensus on mainnet. Validator pilot cohort operational. Active BAIN IDs.
Network Scaling	Full DePIN scaling across biomes. Institutional integration. Governance transition.
Open Standard	BAIN Standards Consortium established. Specification governance transfers from KRYONIS.

9. Why Base

Base is a strategic alignment, not an arbitrary chain selection. Coinbase's institutional reach bridges DePIN infrastructure with regulated capital markets. Sub-cent transaction costs make per-attestation micro-fees economically viable. EVM compatibility ensures composability with the broader DeFi ecosystem. The Coinbase brand reduces compliance friction for institutional participants.

10. Closing Position

BCCS does not compete with carbon credits. It addresses a different and broader problem. Where carbon markets measure a single dimension of a complex system, BCCS measures the system itself — its state, its trajectory, its thermodynamic truth.

The $BCCS verification unit is infrastructure for an economy where biological capital is as legible, verifiable, and composable as any financial asset on-chain, and where autonomous agents can verify the state of planetary biology in real time.

Infrastructure Access applications are open at bccs.bio.

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