Executive Summary

Sagitta Protocol is an autonomous, fiduciary-grade investment engine that enforces trustless capital management through continuity governance and gold-backed insurance.

The protocol is designed to preserve capital, discipline risk, and survive systemic failure through architecture rather than discretion. Sagitta restructures capital allocation as an insured, rule-bound, and continuity-governed system instead of a market-dependent or trust-based arrangement.

Problem Context

Modern capital allocation systems expose participants to layered risks without enforcing commensurate protection. Yield optimization, leverage, discretionary governance, and dependency on external infrastructure frequently transfer downside to users while insulating decision-makers.

Sagitta addresses this problem by treating **capital protection, loss accountability, and survivability as first-class system requirements**, not secondary features.

Protocol Overview

Sagitta is composed of distinct, cooperating subsystems, each operating under defined authority boundaries:

- **Vault** — protocol-level custody and accounting for contributed capital
- **Treasury** — monetary authority governing liquidity formation, allocation batches, and settlement
- **Reserve** — capitalized, gold-backed insurance layer protecting participant principal
- **Autonomous Allocation Agent** — quantitative intelligence providing risk-aware allocation recommendations

- **Escrow** — isolated execution boundary interfacing with external allocation venues
- **Sagitta Continuity Engine** — survival authority governing evacuation, substitution, and reconstitution under failure

No single subsystem is indispensable. Authority is layered to prevent risk concentration.

Capital Protection and Fiduciary Discipline

Sagitta enforces fiduciary alignment structurally.

Participant principal is protected through reserve-backed insurance and deterministic settlement. Allocation underperformance is absorbed at the protocol level through ordered loss handling rather than passed to participants. Growth is constrained by insured capacity, ensuring solvency precedes expansion.

Fiduciary behavior is enforced by protocol law rather than operator intent.

Survivability and Continuity

Sagitta is designed to operate under adverse conditions, including:

- allocation losses
- stablecoin depegs
- reserve asset volatility
- governance compromise
- execution or counterparty failure
- blockchain-level disruption

The Sagitta Continuity Engine governs response through predefined doctrine, ensuring depositor protection and system solvency persist during evacuation, substitution, and recovery.

Survival is treated as a deterministic system function.

Role-Based and Chain-Agnostic Design

All critical dependencies within Sagitta are defined by role rather than fixed implementation. Currencies, tokens, execution venues, governance mechanisms, and blockchain environments are replaceable without redesigning the protocol.

This role-based design enables adaptability across market, infrastructure, and regulatory conditions while preserving core guarantees.

System Invariants

Sagitta operates under immutable system invariants, including:

- preservation of participant principal
- insurance-constrained growth
- protocol-level loss accountability
- reserve supremacy over optimization
- deterministic settlement
- continuity governance under failure

These invariants constrain all protocol behavior, upgrades, and governance actions.

Protocol Intent

Sagitta does not pursue yield maximization, leverage amplification, or market reflexivity.

The protocol prioritizes:

- capital preservation

- solvency enforcement
- disciplined allocation
- long-term continuity

Sagitta is built to function when conditions deteriorate, not only when they are favorable.

Summary

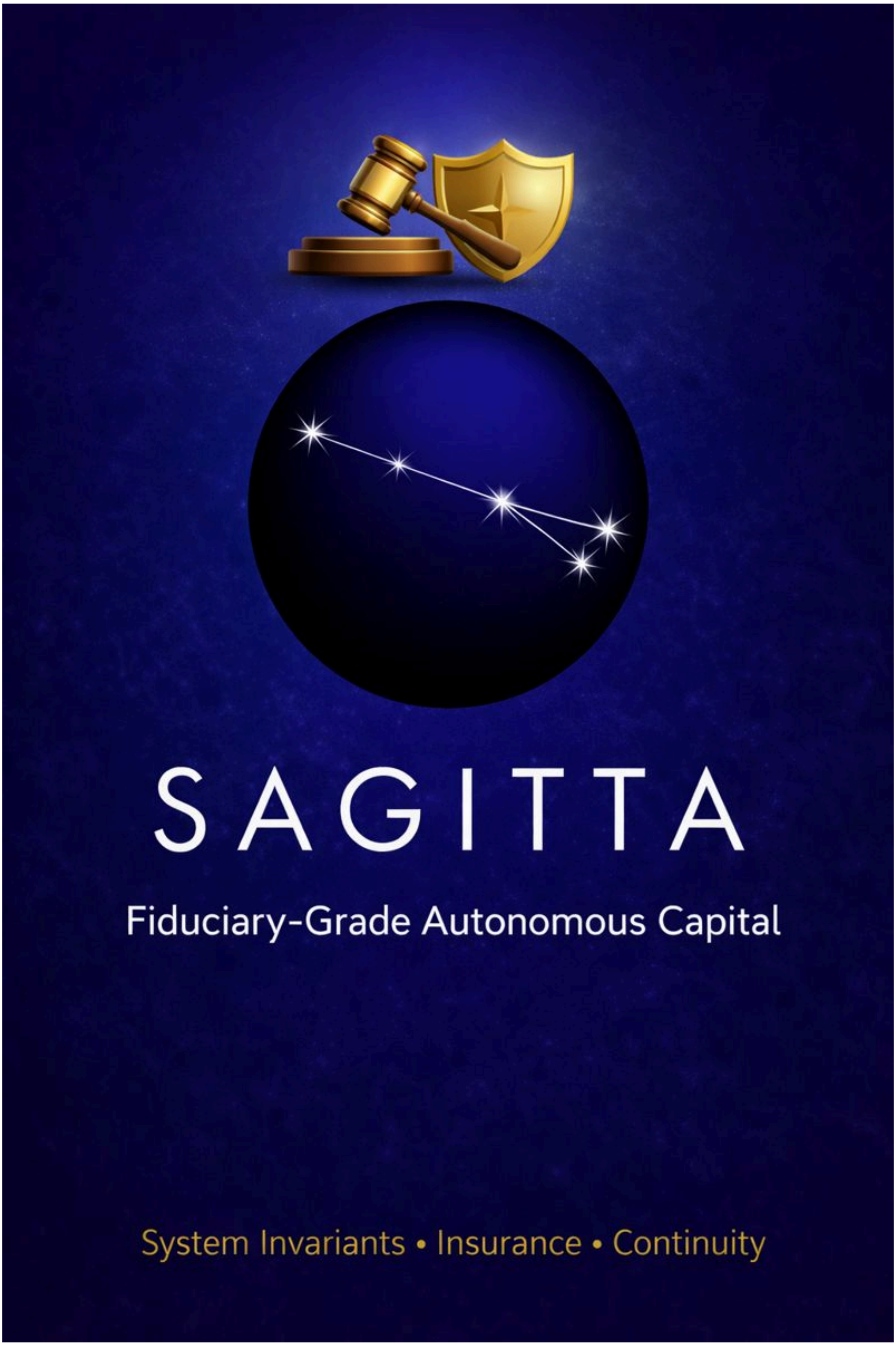
Sagitta Protocol defines a new class of financial infrastructure: **insured, autonomous, and continuity-governed capital allocation**.

By enforcing fiduciary discipline through architecture, reserves, and protocol law, Sagitta transforms capital management from a trust-based activity into a survivable system.

The protocol exists to ensure that **capital remains protected, accountable, and continuous across all states of operation**.

Sagitta Protocol

Sagitta Protocol is an autonomous, fiduciary-grade financial system that enforces trustless capital management through continuity governance and gold-backed insurance.



1. Protocol Identity

Sagitta is a **gold-backed, insurance-first capital allocation protocol** designed to preserve depositor principal, discipline risk-taking, and maintain continuity under adverse conditions.

The protocol coordinates custody, allocation, execution, insurance, intelligence, and survival through a layered system of authorities. Each authority operates within defined bounds, and no single component is indispensable to system survival.

Sagitta is constructed as **financial infrastructure**, not a product.

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2. Problem Domain

Modern capital allocation systems expose participants to layered risks without enforcing commensurate protection. Yield optimization, leverage, governance discretion, and dependency fragility frequently transfer downside to users while insulating decision-makers.

Sagitta addresses this problem class by restructuring capital flow around three core principles:

- **Insurance precedes optimization**
- **Loss accountability resides at the protocol level**
- **Survivability is designed, not assumed**

These principles define Sagitta’s role as a fiduciary-aligned system rather than a speculative mechanism.

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3. System Guarantees

Sagitta enforces the following guarantees as **protocol invariants**:

- Depositor principal protection through capitalized insurance
- Reserve-constrained growth proportional to insured capacity
- Explicit loss absorption and accountability

- Deterministic settlement across allocation outcomes
- Continuity under component, asset, or governance failure

These guarantees are enforced structurally through capital backing, rule-based settlement, and predefined authority boundaries.

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4. Layered Authority Model

Sagitta operates through a **layered authority architecture** that separates concerns and prevents risk concentration.

- **Custody and accounting** are isolated from allocation decisions
- **Allocation intelligence** is isolated from capital movement
- **Execution** is isolated from policy formation
- **Insurance** is isolated from yield generation
- **Continuity** overrides all subsystems during failure conditions

This separation ensures that no single layer can unilaterally expose depositors to risk.

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5. Capital Flow Overview

Capital within Sagitta follows a deterministic lifecycle:

1. Deposits are recorded and protected through the Vault
2. Allocation liquidity is formed and governed by the Treasury
3. Allocation intelligence evaluates risk and opportunity
4. Execution is carried out through isolated Escrow contexts
5. Outcomes are settled and reconciled deterministically
6. Losses are absorbed and insurance enforced by the Reserve
7. Continuity actions govern evacuation, substitution, and recovery

Each stage operates under defined authority and bounded responsibility.

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6. Role-Based Design Doctrine

Sagitta treats all critical dependencies as **roles**, not fixed implementations.

Roles include:

- Stability Unit
- Treasury Token
- Reserve Asset
- Allocation Intelligence
- Execution Venue
- Governance Authority

Each role has defined responsibilities, acceptable substitutions, and migration procedures. This design enables replacement without systemic redesign and ensures adaptability under stress.

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7. Fiduciary Alignment by Architecture

Sagitta aligns with fiduciary principles through **system design rather than discretionary promise**.

Principal protection, loss absorption, reserve-relative performance evaluation, and constrained growth are enforced mechanically. Risk-taking is justified only when it outperforms protection, and underperformance results in protocol-level consequence.

Fiduciary behavior emerges from structure and persists across market cycles.

---

8. Survivability and Continuity

Sagitta is designed to survive:

- asset impairment and currency depegs
- token market disruption
- governance compromise
- execution and counterparty failure
- infrastructure and oracle disruption

The Sagitta Continuity Engine governs evacuation, substitution, degradation, and reconstitution through predefined doctrine. Continuity actions preserve depositor protection and system solvency while restoring operational capacity.

Survival is treated as a **first-class system function**.

---

9. Modular and Standalone Architecture

Each Sagitta subsystem is independently deployable and licensable:

- Vault as a custody and accounting layer
- Treasury as a monetary and allocation authority
- Reserve as a decentralized insurance system
- Autonomous Allocation Agent as a quantitative intelligence layer
- Escrow as an execution and compliance boundary
- Continuity Engine as a survival and substitution framework

Together, these systems form a coherent protocol. Individually, they operate as infrastructure components suitable for external integration.

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10. Protocol Posture

Sagitta does not pursue yield maximization, leverage amplification, or dependency concentration.

The protocol prioritizes:

- capital preservation
- solvency enforcement
- disciplined allocation
- structural accountability
- long-term continuity

Growth is earned through retained performance and reinforced insurance capacity.

---

11. Summary

Sagitta is a **capital allocation protocol designed to endure**.

It insures deposits, disciplines risk, penalizes underperformance, and survives component failure through layered authority and reserve-backed guarantees.

Sagitta does not assume favorable conditions.
It is built to operate when conditions deteriorate.

The protocol exists to ensure that **capital remains protected, accountable, and continuous across all states of the system**.

Scope & Non-Banking Clarification

Protocol Boundaries and Legal Posture

Purpose

This section defines the **scope of the Sagitta Protocol** and clarifies its **non-banking posture**.

It exists to distinguish protocol-level capital mechanics from regulated financial activities performed by traditional institutions, while preserving the integrity and authority of the protocol's design.

This clarification governs interpretation of all subsequent chapters.

Protocol Scope

Sagitta is a **protocol-defined financial system**, not a banking institution, trust company, or custodial service provider.

All capital interactions described in this document occur at the **protocol level**, governed by deterministic rules, smart-contract logic, and system invariants. No legal entity exercises discretionary control over participant capital.

Sagitta defines:

- how capital is recorded,
- how it may be allocated,
- how outcomes are settled, and
- how protection and continuity are enforced,

through **protocol law**, not corporate discretion.

Non-Banking Posture

The Sagitta Protocol does **not** engage in banking, trust, or deposit-taking business.

Specifically:

- The protocol does not accept deposits as banking liabilities
- The protocol does not operate deposit accounts
- The protocol does not offer on-demand withdrawal promises characteristic of banking
- No legal entity guarantees repayment as a balance-sheet obligation

References in this document to “deposits,” “depositors,” or similar terms describe **protocol-level capital contributions** governed by system accounting and invariants, not deposits held by or owed from a regulated financial institution.

Capital Contributions and Protocol Accounting

Capital contributed to Sagitta is governed by:

- protocol-defined custody and accounting logic,
- rule-based allocation and settlement,
- reserve-backed protection mechanisms, and
- continuity governance.

Capital protection arises from **structural design**, including reserves, loss-absorption ordering, and deterministic settlement, rather than from corporate guarantees or discretionary promises.

Insurance and Protection Clarification

Any reference to “insurance” within Sagitta describes **protocol-level reserve mechanisms** that absorb losses and preserve principal according to predefined rules.

Such mechanisms:

- are capitalized within the protocol,
- operate automatically under protocol law, and
- do not constitute insurance contracts issued by an insurer or guaranteed by a legal entity.

Protection is enforced **mechanically**, not contractually.

Governance and Authority Boundary

Governance within Sagitta:

- defines parameters,
- approves doctrine, and
- oversees upgrades,

but does not exercise discretionary custody or banking authority.

Protocol behavior remains constrained by system invariants regardless of governance composition or outcomes.

Interpretation Guidance

This whitepaper describes **how the Sagitta Protocol functions**, not how any specific legal entity conducts regulated financial business.

Where legal entities interact with the protocol (e.g., development, governance facilitation, or infrastructure support), such activities are separate from and subordinate to protocol-level operation.

Closing Statement

Sagitta is designed as **financial infrastructure governed by protocol law**, not as a bank, trust, or custodial institution.

Capital safety, discipline, and continuity emerge from **structure, reserves, and enforcement**, not from reliance on corporate promises or regulatory classification.

This clarification preserves both:

- the **sovereignty of the protocol**, and
- the **integrity of applicable legal boundaries**.

Fiduciary Alignment

Sagitta aligns with fiduciary principles through **deterministic system architecture** that governs capital protection, loss handling, and incentive alignment at all times.

Fiduciary behavior is encoded directly into protocol structure, ensuring that depositor protection, capital discipline, and accountability are enforced continuously through rule-based mechanisms rather than discretionary decision-making.

Principal Protection as a Core Invariant

Sagitta establishes depositor principal protection as a **first-order system invariant**.

Deposits are backed by a capitalized Reserve that functions as deposit insurance, including coverage for allocation underperformance, execution failure, stable unit impairment, and Vault system failure. Principal restoration is executed through pre-funded Reserve mechanisms and enforced at settlement boundaries.

This structure mirrors the functional role of deposit insurance in traditional finance while operating through automated capital enforcement.

Structured Loss Absorption

Sagitta implements a **defined loss absorption framework** that assigns downside responsibility at the protocol level.

Allocation outcomes are reconciled through an ordered settlement process in which yield variability, Treasury-retained capital, and Reserve assets collectively absorb underperformance. Depositor principal remains protected throughout all allocation cycles.

This framework ensures that risk is borne by system capital rather than transferred to depositors.

Reserve-Relative Performance Evaluation

Sagitta evaluates allocation outcomes relative to its own protection mechanisms.

Reserve value is recorded at allocation inception and re-evaluated at settlement. When Reserve assets outperform active allocation strategies over the same interval, a defined portion of Reserve appreciation is credited to depositors as substituted yield.

This mechanism aligns allocation intelligence with capital preservation and rewards outcomes that justify risk relative to protection.

Capital Discipline and Growth Governance

Sagitta governs growth through insured capacity rather than demand expansion.

Deposit acceptance, allocation sizing, and liquidity formation are bounded by Reserve coverage ratios. As Reserve capacity increases through retained performance, system scale expands proportionally.

This approach ensures that growth reflects earned solvency rather than leverage.

Functional Separation of Authority

Sagitta structures fiduciary alignment through **clear separation of system roles**.

- The Vault enforces depositor accounting and ownership records
- The Treasury coordinates allocation, settlement, and monetary operations
- The Reserve insures deposits and absorbs systemic losses
- The Continuity Engine governs behavior under failure conditions

This separation ensures that capital protection remains independent of allocation and execution decisions.

Deterministic Enforcement

Sagitta enforces fiduciary alignment through **predefined rules, ratios, and settlement doctrines**.

Loss handling, Reserve drawdown, yield substitution, and recapitalization behaviors are established in advance and executed mechanically. Outcomes remain predictable and auditable across all operating conditions.

Fiduciary-Grade by Architecture

Sagitta expresses fiduciary alignment through **capital-backed guarantees, explicit accountability, and disciplined growth mechanics**.

Depositor protection, loss absorption, and performance evaluation are enforced structurally rather than rhetorically. Fiduciary behavior emerges from system design and persists independently of operator intent.

Fiduciary alignment in Sagitta is **encoded**.

Vault

Principal-Protected Deposit, Accounting, and Ownership Infrastructure

1. Mandate

The Sagitta Vault is the accounting authority of the Sagitta system.

Its mandate is singular and absolute:

Depositor principal is preserved across allocation activity, execution failure, governance failure, and systemic market disruption.

Sagitta treats principal as sovereign capital. Yield is conditional and subordinate. The Vault therefore exists as a correctness-first accounting and ownership system whose function is to remain enforceable when other systems degrade or fail.

Every subsystem in Sagitta operates downstream of this mandate.

---

2. System Role

The Vault is the canonical source of truth for depositor balances and ownership claims.

It records deposits, enforces principal protection, and maintains an append-only accounting state. It exposes verifiable read access to downstream systems while retaining exclusive authority over balance mutation.

Allocation engines, execution layers, AI components, and governance mechanisms consume Vault state but do not control it.

The Vault is a fixed point within the architecture.

---

3. Enforced Invariants

The Vault enforces the following invariants continuously and without exception.

Principal Preservation

Recorded depositor principal is immutable. Balance transitions never reduce principal.

Accounting Finality

All accounting entries are append-only. Historical records are permanent and auditable.

Execution Independence

External protocol behavior, chain conditions, and execution venue outcomes do not directly affect Vault balances.

Unit Abstraction

Balances are modeled independently of any single currency, enabling controlled unit substitution while preserving depositor proportionality.

These invariants are enforced structurally and do not rely on discretionary control.

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4. DAO-Configurable Vault Instances

Sagitta supports multiple independent Vault instances.

Each instance represents a parameterized deployment governed by a DAO or institutional operator. Instance configuration establishes policy boundaries applied uniformly to all deposits within that Vault.

Instance parameters include:

- Accepted deposit units

- Commitment period policy
- Withdrawal eligibility rules
- Yield attribution rules
- Ownership representation (receipt-based or account-based)
- State visibility model

Configuration defines liquidity and representation policy while preserving invariant enforcement. All Vault instances share identical safety guarantees.

Vault instance configuration includes system fee parameters governing receipt-based ownership representation.

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5. Commitment Period Definition

Each Vault instance enforces a commitment period that governs withdrawal eligibility.

Sagitta's default configuration establishes a **12-month commitment period**, aligning depositor expectations with long-horizon fiduciary allocation.

Commitment periods are configurable per instance and support zero-lock configurations.

Commitment policy defines **withdrawal timing** only. It does not alter principal preservation, accounting finality, or continuity behavior.

---

6. Multi-Currency and Unit-Agnostic Accounting

The Vault accepts deposits in multiple approved units.

Internally, the Vault models each deposit as:

- Principal value
- Unit identifier

- Ownership claim
- Commitment state
- Yield eligibility state

Accounting is unit-agnostic. The Vault does not assume permanence of any currency.

When a unit becomes invalid, the Vault transitions balances to a successor unit under pre-committed continuity doctrine. Depositor ownership proportions remain intact. Principal value is preserved. Yield attribution resumes only after accounting stability is restored.

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7. Yield Attribution Model

The Vault implements a realization-based yield model.

Yield is recorded only after realization and validation by downstream systems. Yield attribution is additive and discretionary at the policy level. Yield may be suspended without impairing principal.

The Vault records yield events; it does not generate them.

---

8. NFT Deposit Receipts

Vault instances may represent deposit ownership through **non-fungible deposit receipts**.

Each receipt is a cryptographic certificate of claim bound to a specific deposit position. The Vault remains the accounting authority; the receipt represents ownership.

Receipt metadata binds to:

- Deposit identifier

- Principal amount and unit
- Commitment parameters
- Yield eligibility
- Withdrawal rights

Receipt transfer transfers ownership of the deposit claim without altering Vault balances or bypassing instance policy.

8.1 Settlement and Burn Semantics

Upon withdrawal of an unlocked deposit position, the corresponding receipt is **burned**.

The burn event constitutes final settlement and extinguishes the ownership claim. No receipt remains valid after redemption.

8.2 Receipt Constraints

Deposit receipts encode ownership representation exclusively.

They do not create leverage, confer governance authority, bypass commitment rules, or alter Vault accounting behavior.

8.3 System Fees and Receipt Minting Costs

Vault instances that enable NFT deposit receipts enforce a **system-level fee** associated with receipt issuance.

This fee is defined at the DAO or operator level and applies uniformly to all deposits within the Vault instance. Its purpose is to cover the on-chain and operational costs associated with receipt minting, storage, lifecycle management, and settlement (burn) events.

Key properties of the system fee:

- The fee is **deterministic and disclosed at deposit time**
- The fee is **instance-specific** and configurable by governance
- The fee applies only when receipt-based ownership representation is enabled
- The fee does not affect depositor principal recorded in the Vault
- The fee is collected outside of Vault principal accounting

The system fee is treated as **infrastructure cost recovery**, not yield extraction. It does not introduce variable incentives, speculative dynamics, or performance coupling.

Receipt minting, transfer, and burn events are therefore economically sustainable without entangling Vault accounting with protocol revenue logic.

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9. Confidentiality Model

The Vault supports both public-state and confidential-state deployments.

In confidential-state deployments, depositor balances and receipt metadata are protected while accounting correctness remains verifiable and auditable by authorized parties.

Confidentiality is a deployment property integrated at the accounting layer.

Transparency in Sagitta is defined as **verifiable correctness**, not universal exposure.

---

10. Governance Authority Boundaries

Governance configures Vault instances and forward-looking policy parameters.

Governance authority does not extend to:

- Principal preservation
- Historical accounting state
- Invariant enforcement
- Continuity doctrine execution

The Vault remains enforceable under adversarial or failed governance conditions.

---

11. Continuity Behavior

During systemic disruption:

- Accounting state remains accessible
- Principal remains preserved
- Yield attribution may be suspended
- Ownership claims remain enforceable
- Withdrawal eligibility follows commitment policy

The Vault maintains deterministic behavior under all continuity scenarios.

---

12. Standalone Deployment

The Sagitta Vault operates independently of the broader Sagitta Protocol.

It is deployable as a principal-protected custody and accounting system for:

- DAO treasuries
- Institutional capital programs
- Reserve-backed financial instruments
- Long-duration fiduciary capital pools

The Vault provides enforceable principal preservation, configurable liquidity policy, unit-agnostic accounting, and optional receipt-based ownership representation.

13. Summary

The Sagitta Vault defines the financial ground truth of the system.

It is configurable without compromising safety.
It is private without obscuring correctness.
It is composable without introducing fragility.

All other Sagitta systems operate downstream of this authority.

Treasury

Liquidity Brain, Monetary Authority, and Settlement Engine

1. Mandate

The Sagitta Treasury is the **liquidity brain and monetary authority** of the Sagitta Protocol.

Its mandate is to coordinate capital, stabilize value, and enforce solvency by translating depositor capital into structured allocation outcomes through disciplined monetary and liquidity operations.

The Treasury governs:

- liquidity flows,
- allocation batch formation,
- reserve enforcement,
- yield settlement,
- and the lifecycle of the protocol’s monetary instruments.

The Treasury exists to ensure that **capital, value, and safety remain coherent under all market conditions**.

---

2. Position Within the Sagitta System

The Sagitta Treasury occupies the central coordination role in the protocol.

- The **Sagitta Vault** records deposits and preserves depositor principal.
- The **Sagitta Treasury** converts deposits into allocation batches and monetary actions.
- The **Sagitta Reserve** provides collateral backing and yield insurance.
- The **Sagitta Escrow** executes capital deployment on-chain and off-chain.
- The **Autonomous Allocation Agent** evaluates strategies and performance.

- The **Sagitta Continuity Engine** governs survival behavior under systemic stress.

The Treasury is the **integration point** where accounting, markets, allocation, settlement, and continuity converge.

---

3. Role-Token Doctrine

Sagitta treats tokens as **functional roles**, not identities.

A token is an implementation of a role within the system.
The role is canonical.
The token is replaceable.

This doctrine ensures that:

- token failure does not imply protocol failure,
- migrations do not require protocol redesign,
- continuity is preserved across issuers, chains, and jurisdictions.

The Treasury operates exclusively on **role-defined instruments**.

---

4. Treasury Token Authority

The Sagitta Treasury has exclusive authority over the **Treasury Token**.

The Treasury Token is the protocol's endogenous monetary coordination instrument. It is used to:

- align protocol value with productive capital outcomes,
- enforce reserve discipline,
- finalize allocation batch settlement.

The Treasury controls:

- issuance of the Treasury Token,
- retirement (burning) of the Treasury Token,
- open-market purchases of the Treasury Token,
- open-market sales of the Treasury Token.

All Treasury Token operations are **rule-bound, batch-scoped, and auditable**.

The Treasury Token's identity may change over time. Its **role does not**.

---

5. Stability Unit Definition

The **Stability Unit** is the protocol's primary accounting and settlement unit.

It is used for:

- establishing value of Vault deposits,
- allocation batch sizing,
- yield accounting,
- reserve ratio measurement,
- depositor yield distribution.

The Stability Unit represents *stable purchasing power*, not allegiance to a specific issuer or asset.

The Treasury operates on the assumption that any specific Stability Unit implementation may fail. Unit substitution is governed by continuity doctrine and does not impair depositor principal.

---

6. Batch-Based Liquidity Formation

The Treasury operates on **discrete allocation batches**, a weekly cadence by default.

For each batch:

1. The Treasury observes the aggregate value of eligible Vault deposits denominated in the Stability Unit.
2. It allocates a corresponding amount of Stability Units equal to that value.
3. The batch is isolated as a closed accounting envelope.
4. Capital is routed for deployment through the Sagitta Escrow.

Each batch has:

- defined inputs,
- defined deployment paths,
- defined settlement conditions.

Batches do not overlap and are settled independently.

---

7. Liquidity Routing and Capital Deployment

The Treasury routes batch capital based on scale and strategy profile:

- **Small and mid-scale deposits** are routed to approved on-chain staking pools.
- **Institutional-scale deposits** are routed to off-chain managed portfolios through the Escrow system.

Routing decisions are informed by performance data and strategy evaluation supplied by the Autonomous Allocation Agent while remaining constrained by reserve requirements and safety ratios.

The Treasury continuously tracks deployed capital, exposure, and performance across all active batches.

---

8. Profit and Loss Accounting

The Treasury maintains continuous profit and loss accounting across all deployed capital.

For each batch, it records:

- allocated Stability Units,
- realized returns,
- unrealized positions,
- costs and fees,
- net Stability Unit outcome.

Profit and loss data directly informs:

- batch settlement,
- reserve enforcement,
- future batch sizing,
- yield eligibility.

---

9. Batch Settlement and Treasury Token Buyback

At batch conclusion:

1. All capital is reconciled into realized Stability Unit outcomes.
2. The Treasury executes **Treasury Token buybacks** using realized value.
3. Purchased Treasury Tokens are **burned**, finalizing the batch.

The burn event is the settlement boundary.
A batch is not finalized until Treasury Token retirement occurs.

This mechanism:

- converts productive capital outcomes into token scarcity,
- anchors Treasury Token value to realized performance,
- prevents perpetual monetary expansion,

- aligns protocol success with depositor outcomes.

---

10. Reserve-Relative Settlement for Negative Allocation Outcomes

For each allocation batch, the Sagitta Treasury records a **snapshot of Reserve value**, denominated in Stability Units, at the time the batch is formed.

At batch settlement, the Treasury evaluates allocation performance relative to this Reserve snapshot.

When an allocation batch returns fewer Stability Units than deployed, the Treasury applies a **reserve-relative settlement rule**:

- Allocation underperformance is assessed against Reserve performance over the same interval
- If the Reserve has appreciated in Stability Unit terms, a defined portion of that appreciation is credited to eligible Vault deposits as substituted yield
- The substituted yield is capped by Treasury doctrine and sourced exclusively from Reserve gains

This mechanism ensures that depositor outcomes reflect **relative capital performance**, not absolute allocation results.

When active allocation underperforms passive Reserve protection, value flows toward depositors and away from protocol surplus.

---

11. Protocol Accountability and Capital Discipline

Reserve-relative settlement operates as an explicit **protocol accountability mechanism**.

- Reserve drawdowns resulting from substituted yield reduce protocol surplus
- Reduced surplus tightens future allocation capacity
- Allocation intelligence is incentivized to outperform the Reserve over time

This creates a self-correcting feedback loop that favors capital preservation over yield chasing.

Reserve-relative settlement is suspended only when Reserve values approach minimum safety thresholds defined by continuity doctrine. Depositor principal protection remains invariant.

---

12. Reserve Ratio Enforcement (2:1)

The Treasury enforces a **Reserve collateralization target of 2:1**.

For every unit of deployed, risk-bearing capital, two units of Reserve value are maintained.

Reserve enforcement occurs through:

- batch sizing adjustments,
- Treasury Token market operations,
- direct Reserve rebalancing actions.

Reserve discipline is mechanical and continuous.

---

13. Reserve Rebalancing and Hard Backstops

The Treasury operates a rebalancing mechanism that includes liquidation of Reserve assets when required.

Reserve drawdowns are triggered to:

- restore collateralization ratios,
- absorb allocation underperformance,
- preserve depositor principal,
- maintain protocol solvency.

Reserve assets are treated as a **last-line stability mechanism**, not a yield engine.

---

14. Yield Distribution to Vault Deposits

After batch settlement:

- net Stability Unit yield is calculated,
- yield is distributed proportionally to eligible Vault deposits,
- principal remains intact.

Yield distribution is authorized by the Treasury and accounted for by the Vault.

Yield may be positive or zero depending on batch results.

---

15. Interaction With the Autonomous Allocation Agent

The Autonomous Allocation Agent evaluates candidate strategies before and during batch formation.

It provides:

- simulations,
- risk analysis,
- performance comparisons,
- explanatory reasoning.

The Treasury remains the authority that commits capital.
The agent informs allocation quality without exercising control.

---

16. Governance Interaction

Governance establishes **policy parameters** that shape Treasury behavior.

Governance defines:

- batch cadence,
- reserve targets,
- eligible strategy classes,
- risk tolerance ranges.

Governance does not intervene in operational execution or monetary settlement.

This separation preserves discipline and continuity.

---

17. Behavior Under Stress

Under adverse or unstable conditions, the Treasury adopts a **preservation posture**.

In such states:

- batch formation may pause,
- allocation capacity contracts,
- Treasury Token issuance tightens,
- buybacks prioritize reserve restoration,
- yield distribution may be suspended.

The Treasury shifts from optimization to **survival coordination**.

---

18. Determinism and Auditability

All Treasury behavior is:

- batch-defined,
- rule-governed,
- deterministic,

- externally auditable.

Capital flows, monetary actions, reserve movements, and yield outcomes are fully reconstructible from system records.

---

19. Treasury Token Lifecycle

The Sagitta Treasury Token operates under a **defined lifecycle** that governs how it participates in capital formation, balance-sheet consolidation, and long-term protocol operation. The lifecycle reflects the protocol's progression from externally financed growth to internally capitalized sovereignty.

The Treasury Token is a **role-token**. Its function is defined by protocol doctrine and exercised by the Sagitta Treasury in coordination with Reserve and Continuity systems.

---

20. Phase I — Capital Formation

Role: Liquidity Formation Instrument

In the capital formation phase, the Treasury Token enables the Sagitta Treasury to acquire Stability Units used to initiate allocation batches.

During this phase:

- Treasury Token issuance converts future protocol productivity into present liquidity
- Allocation capacity expands under Reserve discipline
- Early participants gain exposure to protocol outcomes
- Real returns begin accumulating on the Treasury balance sheet

The objective of this phase is **initial capitalization and operational activation**.

---

21. Phase II — Balance-Sheet Transition

Role: Liability Consolidation Instrument

As retained Stability Units accumulate through successful allocation cycles, the Treasury enters a balance-sheet transition phase.

During this phase:

- Allocation funding increasingly originates from retained capital
- Treasury Token issuance declines organically
- Buybacks and burns convert realized performance into reduced external claims
- Solvency and Reserve strength increase with each completed cycle

The Treasury Token functions as a **mechanism for converting performance into structural strength**.

The objective of this phase is **internalization of capital and reduction of financing dependency**.

---

22. Phase III — Maturity

Role: Residual Claim, Value Signal, and Recapitalization Instrument

In the maturity phase, the Sagitta Protocol operates as a **balance-sheet funded system**. Allocation batches are financed primarily through Treasury-held Stability Units and protected by Reserve assets.

During this phase:

- Allocation efficiency increases due to lower capital formation costs
- Reserve reinforcement becomes the dominant use of surplus capital
- Treasury Token supply stabilizes at a reduced level
- Buybacks occur selectively as surplus conditions allow

The Treasury Token serves as:

- a residual claim on future excess performance
- a value signal reflecting protocol health and discipline
- an economically aligned governance instrument
- a recapitalization tool available under continuity doctrine

The objective of this phase is **sovereign operation with retained optionality**.

---

23. Treasury Token Behavior in Maturity

When operating in a balance-sheet funded state, Treasury policy allocates surplus Stability Units according to the following priority order:

1. **Reserve Ratio Reinforcement**
   Surplus capital strengthens the Reserve to maintain target collateralization levels, including acquisition of hard Reserve assets.
2. **Continuity Capital**
   Treasury-held Stability Units ensure uninterrupted operation across adverse market conditions.
3. **Operational Liquidity**
   Capital is retained to fund future allocation batches without reliance on external financing.
4. **Treasury Token Buybacks**
   When surplus remains beyond solvency and continuity requirements, Treasury Tokens are acquired and retired to consolidate claims.

Treasury Token issuance is exercised as a **recapitalization function** within defined doctrine when required by system conditions.

---

24. Lifecycle Adaptability

The Treasury Token lifecycle is **directional and adaptive**.

The Sagitta Continuity Engine coordinates lifecycle transitions in response to system conditions, enabling controlled shifts between phases to preserve depositor protection, Reserve integrity, and protocol continuity.

Lifecycle adaptability ensures the protocol remains resilient across growth, consolidation, and stress environments.

---

25. Summary

The Sagitta Treasury is the protocol's liquidity brain and monetary authority.
It forms allocation liquidity, deploys capital in discrete batches, and settles outcomes under explicit doctrine.

The Treasury manages the lifecycle of the Treasury Token and the Stability Unit, treating tokens as swappable roles rather than fixed dependencies.
Allocation results are evaluated relative to the Reserve, with underperformance penalized at the protocol level.

Surplus capital is retained, consolidated, or redirected to enforce solvency and continuity.
As retained capital grows, the Treasury transitions the protocol toward balance-sheet funded operation.

Reserve

Deposit Insurance System, Solvency Backstop, and Continuity Anchor

1. Mandate

The Sagitta Reserve is the **deposit insurance system** of the Sagitta Protocol.

Its mandate is to guarantee depositor principal under adverse conditions, including allocation underperformance, execution failure, and **Vault system failure**. The Reserve exists to ensure that depositor funds remain whole regardless of operational, market, or infrastructure faults elsewhere in the protocol.

The Reserve functions as a **decentralized analogue to deposit insurance**, enforcing protection through capital backing rather than discretionary intervention.

---

2. Position Within the Sagitta System

The Sagitta Reserve operates as an independent protection layer beneath all depositor-facing systems.

- The **Sagitta Vault** records deposits and enforces accounting rules
- The **Sagitta Treasury** coordinates allocation, settlement, and monetary operations
- The **Sagitta Reserve** insures deposits and absorbs systemic losses
- The **Sagitta Escrow** executes capital deployment
- The **Autonomous Allocation Agent** evaluates strategies
- The **Sagitta Continuity Engine** governs failure response

The Reserve exists **outside allocation logic** and **outside execution paths**, serving solely as depositor protection.

---

3. Insurance Coverage Scope

The Reserve provides coverage against the following failure classes:

- Allocation losses exceeding Treasury-retained capital
- Execution or counterparty failure within the Escrow system
- Vault accounting or contract failure
- Stable unit failure or impairment
- Protocol-level faults triggering continuity events

Coverage applies to **depositor principal** and operates independently of depositor yield eligibility.

---

4. Reserve Composition

The Reserve is composed of **hard, non-correlated assets** selected for durability under systemic stress.

In the current reference implementation, the Reserve is anchored by **tokenized gold (XAUT)**. The Reserve role is asset-agnostic and may incorporate additional real-world or digital assets as defined by Treasury and continuity doctrine.

Reserve assets are isolated from allocation capital and are never deployed for yield generation.

---

5. Reserve Ratio Doctrine (2:1)

The Sagitta Reserve enforces a **target insurance coverage ratio of 2:1**.

For every unit of Stability Units deployed into risk-bearing allocation or held as depositor principal, the Reserve maintains two units of Reserve value.

This ratio governs:

- maximum deposit acceptance
- allocation batch sizing

- Treasury liquidity formation
- protocol growth rate

Reserve ratio enforcement ensures that deposit insurance coverage scales mechanically with system exposure.

---

6. Reserve Snapshotting

At the initiation of each allocation batch, the Treasury records a **snapshot of Reserve value**, denominated in Stability Units.

This snapshot establishes a baseline for:

- insurance coverage verification
- reserve-relative settlement logic
- continuity threshold monitoring

Snapshotting ensures that Reserve obligations are evaluated consistently across allocation cycles.

---

7. Loss Absorption and Insurance Payout

When allocation outcomes or system failures impair deployed capital, the Reserve absorbs losses according to insurance doctrine.

Loss absorption proceeds through:

- application of Treasury-retained capital
- controlled liquidation of Reserve assets
- settlement of depositor claims

Reserve payouts restore depositor principal to Vault balances or alternative custody paths as defined by continuity doctrine.

---

8. Reserve-Relative Yield Substitution

When active allocation underperforms while Reserve assets appreciate over the same interval, a portion of Reserve appreciation is credited to depositors as **substituted yield**.

This mechanism:

- penalizes protocol underperformance
- rewards depositor patience
- enforces alignment between allocation intelligence and protection performance

Substituted yield is capped and sourced exclusively from Reserve gains.

---

9. Vault Failure Protection

In the event of Vault system failure, compromise, or irrecoverable fault, the Reserve activates **deposit insurance settlement**.

Under this process:

- depositor balances are reconstructed from last valid snapshots
- Reserve assets are liquidated as required
- depositor principal is restored through alternative settlement mechanisms

Vault failure does not impair depositor claims.

---

10. Reserve Replenishment

The Reserve is replenished through:

- surplus Stability Units retained by the Treasury
- explicit Reserve reinforcement allocations

- controlled rebalancing of Treasury assets

Reserve replenishment is prioritized before protocol expansion or Treasury Token consolidation.

---

11. Interaction With Treasury Token

The Reserve operates independently of Treasury Token price, liquidity, or market perception.

Treasury Token operations may support Reserve reinforcement under defined doctrine, but Reserve solvency does not depend on token appreciation.

This separation preserves insurance integrity during token market stress.

---

12. Continuity Integration

The Sagitta Continuity Engine monitors Reserve health continuously.

When Reserve values approach safety thresholds, continuity doctrine may:

- suspend allocation activity
- prioritize Reserve reinforcement
- authorize controlled recapitalization
- enforce emergency contraction measures

Depositor protection remains the highest-order invariant under continuity events.

---

13. Standalone Interpretation

The Sagitta Reserve may be deployed independently as:

- a decentralized deposit insurance system

- a protocol-level capital insurer
- a solvency backstop for digital asset platforms
- a fiduciary protection layer for decentralized finance

The Reserve enforces depositor trust through capital, not promises.

---

14. Summary

The Sagitta Reserve is the **insurance foundation** of the protocol.

It:

- guarantees depositor principal
- absorbs systemic losses
- penalizes underperformance
- constrains growth through coverage discipline
- preserves continuity across failures

Sagitta does not ask depositors to trust code alone.
It **insures them**.

Escrow

Execution Authority, Capital Isolation Layer, and Compliance Boundary

1. Mandate

The Sagitta Escrow is the **execution and settlement authority** of the Sagitta Protocol.

Its mandate is to deploy capital into approved allocation strategies, custody assets during execution, and return results to the Treasury for settlement. Escrow exists to separate **capital movement** from **capital decision-making**, ensuring that execution risk, counterparty exposure, and operational complexity remain isolated from depositor-facing systems.

Escrow moves capital.
It does not define policy, evaluate strategy, or determine risk posture.

---

2. Position Within the Sagitta Protocol

The Sagitta Escrow operates as a **downstream execution layer** within the protocol.

- The **Sagitta Vault** records depositor balances and ownership
- The **Sagitta Treasury** forms liquidity, defines allocation batches, and settles outcomes
- The **Sagitta Reserve** insures deposits and absorbs systemic losses
- The **Autonomous Allocation Agent** evaluates strategies and risk
- The **Sagitta Escrow** executes allocation and holds capital in motion
- The **Sagitta Continuity Engine** governs failure response

Escrow exists at the boundary between protocol intent and external markets.

---

3. Capital Isolation Doctrine

The Sagitta Escrow enforces **capital isolation**.

Each allocation batch is routed into a dedicated Escrow context that:

- segregates assets by batch
- isolates execution exposure
- prevents cross-contamination between strategies
- preserves deterministic settlement

Isolation ensures that failure or underperformance in one execution path does not propagate across the system.

---

4. Scope of Execution

Escrow executes allocation across **on-chain and off-chain venues**, including:

- on-chain staking protocols
- decentralized liquidity venues
- centralized or regulated custodians
- managed portfolios and counterparties

Execution paths are authorized by the Treasury and informed by the Autonomous Allocation Agent. Escrow adapts execution mechanics to venue-specific requirements while preserving batch integrity.

---

5. Custody and Asset Handling

During execution, the Sagitta Escrow functions as a **temporary custodian** of deployed capital.

Custody responsibilities include:

- holding Stability Units and acquired assets

- managing execution-specific keys and permissions
- enforcing asset segregation and accounting
- preparing assets for settlement return

Custody authority is limited to the duration and scope of execution.

---

6. Compliance Boundary

The Sagitta Escrow serves as the protocol's **compliance and jurisdictional boundary**.

Escrow enables:

- interaction with regulated counterparties
- adherence to jurisdiction-specific requirements
- execution through compliant custodial frameworks

This separation allows the protocol to integrate with institutional venues without imposing compliance logic on Vault, Treasury, or Reserve systems.

---

7. Settlement and Reporting

At the conclusion of each allocation batch, Escrow:

- reconciles all executed positions
- converts outcomes into Stability Units
- prepares settlement reports
- returns assets to the Treasury

Settlement outputs are deterministic and batch-scoped, enabling transparent reconciliation and auditability.

---

8. Interaction With the Treasury

The Sagitta Escrow operates under **Treasury authorization**.

The Treasury defines:

- batch size
- approved strategies
- capital routing instructions
- settlement expectations

Escrow executes within these parameters and returns results without modifying allocation intent.

---

9. Interaction With the Reserve

The Sagitta Escrow does not access Reserve assets directly.

In loss or failure scenarios:

- Escrow reports execution outcomes
- Treasury evaluates settlement
- Reserve absorbs losses according to insurance doctrine

This separation preserves Reserve independence and integrity.

---

10. Failure Containment

Escrow failures are **contained by design**.

Failure modes may include:

- execution venue failure

- counterparty default
- operational disruption

Capital isolation and batch scoping ensure that such failures affect only the active execution context. Recovery paths are coordinated by the Continuity Engine.

---

11. Continuity Integration

The Sagitta Continuity Engine monitors Escrow health and execution integrity.

Under continuity events, Escrow may:

- halt execution
- freeze capital movement
- return assets prematurely
- shift execution paths

These actions preserve depositor protection and system solvency.

---

12. Standalone Deployment

The Sagitta Escrow is deployable as a standalone execution and custody layer.

It may operate as:

- a capital execution service for protocols
- a batch-based custody system
- a compliant bridge between decentralized treasuries and institutional venues
- an execution abstraction for fiduciary capital

Standalone operation preserves separation between decision intelligence and capital movement.

---

13. Summary

The Sagitta Escrow is the **execution spine** of the protocol.

It:

- isolates capital during execution
- adapts to diverse venues and jurisdictions
- preserves batch integrity
- contains operational risk
- returns outcomes for deterministic settlement

Sagitta separates intelligence from movement, policy from execution, and protection from exposure.

The Escrow ensures that **capital moves deliberately, transparently, and safely**.

Autonomous Allocation Agent

Quantitative Analytical Intelligence Layer for Capital Evaluation

1. Mandate

The Autonomous Allocation Agent is the quantitative **analytical intelligence layer** of the Sagitta Protocol.

Its mandate is to evaluate allocation opportunities, model risk and performance outcomes, and provide structured intelligence to the Treasury for capital routing decisions. The agent enhances allocation quality through continuous analysis while operating within defined system constraints.

The Autonomous Allocation Agent informs decisions.
The Treasury commits capital.

---

2. Position Within the Sagitta System

The Autonomous Allocation Agent operates as a **non-custodial, non-executing analytical office** within the protocol.

- The **Sagitta Vault** records deposits and enforces accounting rules
- The **Sagitta Treasury** forms liquidity, allocates capital, and settles outcomes
- The **Sagitta Reserve** insures deposits and absorbs underperformance
- The **Sagitta Escrow** executes capital deployment
- The **Autonomous Allocation Agent** evaluates strategies and outcomes
- The **Sagitta Continuity Engine** governs system behavior under failure

The agent exists upstream of execution and downstream of policy, translating strategy space into actionable insight.

---

3. Scope of Analysis

The Autonomous Allocation Agent evaluates candidate allocation strategies across multiple dimensions, including:

- expected return profiles
- volatility and drawdown characteristics
- liquidity and duration properties
- counterparty and execution risk
- correlation with Reserve assets
- historical and simulated performance

Analysis is performed across defined time horizons aligned with allocation batch cadence.

---

4. Quantitative Foundation

The Autonomous Allocation Agent is grounded in **quantitative finance methodologies** traditionally employed by professional asset managers, risk desks, and portfolio construction teams.

Its analytical core reflects established quant practices, including:

- factor-based return analysis
- volatility and drawdown modeling
- correlation and covariance analysis
- scenario and regime simulation
- risk-adjusted performance metrics
- capital efficiency and duration modeling

These methods provide a mathematically rigorous baseline for evaluating allocation strategies across diverse market conditions.

The agent does not invent financial theory.
It operationalizes it at scale.

---

5. Human–Quant–Machine Alignment

Sagitta treats quantitative intelligence as a **shared discipline**, not a replacement for expertise.

The Autonomous Allocation Agent is designed to operate in alignment with:

- established quantitative finance principles
- domain knowledge from professional quants
- Treasury-defined risk and solvency doctrine

Human quant insight informs:

- model selection
- constraint design
- evaluation criteria
- interpretation of edge cases

Machine intelligence contributes:

- scale
- consistency
- simulation depth
- adaptive pattern recognition

This alignment ensures that allocation intelligence remains **disciplined, explainable, and fiduciary-aligned**.

---

6. Quantitative Explainability

All agent outputs are expressed in **quant-native terms** familiar to institutional allocators.

Recommendations include:

- comparative return distributions
- risk-adjusted metrics
- sensitivity to shocks
- Reserve-relative performance deltas

This presentation allows Treasury operators, auditors, and external reviewers to assess recommendations using standard financial reasoning rather than opaque model outputs.

---

7. Strategy Evaluation Framework

The agent operates through a **scenario-driven evaluation framework**.

For each candidate strategy, the agent:

- simulates performance across varied market conditions
- evaluates sensitivity to shocks and regime changes
- estimates impact on Treasury balance sheet and Reserve ratios
- compares outcomes relative to passive Reserve performance

Evaluation outputs are normalized into comparable metrics to support disciplined allocation decisions.

---

8. Reserve-Relative Intelligence

The Autonomous Allocation Agent incorporates **Reserve-relative benchmarking** as a core analytical dimension.

Active strategies are evaluated against the performance of Reserve assets over equivalent intervals. This benchmarking ensures that proposed risk-taking is justified relative to passive protection and aligns analytical incentives with fiduciary preservation.

Strategies that fail to outperform protection mechanisms are deprioritized.

---

9. Interaction With the Treasury

The Autonomous Allocation Agent produces **recommendations, rankings, and explanatory analysis** for Treasury review.

Treasury decisions incorporate:

- agent evaluations
- Reserve coverage constraints
- liquidity requirements
- continuity posture

The agent does not initiate allocation, modify batch sizing, or execute transactions. Its role is advisory and analytical.

---

10. Learning and Adaptation

The agent updates its evaluation models continuously using realized batch outcomes.

Performance data from settled batches feeds back into:

- risk estimation models
- correlation assumptions
- scenario weighting
- strategy ranking heuristics

This adaptive process improves analytical accuracy while remaining bounded by Treasury doctrine and Reserve discipline.

---

11. Explainability and Auditability

The Autonomous Allocation Agent generates **explainable outputs**.

For each recommendation, the agent produces:

- rationale summaries
- contributing factors
- comparative metrics
- confidence assessments

All analytical outputs are logged, versioned, and auditable. This ensures transparency of reasoning and traceability of influence on Treasury decisions.

---

12. Independence From Execution and Custody

The Autonomous Allocation Agent does not custody assets, hold keys, or interface directly with execution venues.

Its independence from capital movement preserves system integrity, reduces attack surface, and prevents analytical intelligence from becoming an execution authority.

---

13. Continuity and Degradation Behavior

Under continuity events, the agent adjusts analytical posture.

Possible modes include:

- conservative strategy filtering
- stress-prioritized evaluation
- reduced recommendation bandwidth
- analysis suspension during emergency states

The agent adapts to system posture without altering capital guarantees.

---

14. Standalone Deployment

The Autonomous Allocation Agent is deployable as a standalone analytical system.

It may operate as:

- a portfolio evaluation engine
- a risk modeling service
- an allocation intelligence layer for funds or protocols
- a decision-support system for fiduciary capital managers

Standalone deployment preserves analytical independence from custody and execution.

---

15. Summary

The Autonomous Allocation Agent strengthens allocation decisions through disciplined analysis.

It:

- evaluates strategy performance and risk
- benchmarks outcomes against Reserve protection
- adapts through feedback and learning
- produces explainable, auditable intelligence

Sagitta treats intelligence as **advisory**, capital as **disciplined**, and protection as **invariant**.

Sagitta treats quantitative finance as a discipline to be scaled, not replaced.

The Autonomous Allocation Agent exists to ensure that **risk is taken consciously, evaluated rigorously, and justified continuously**.

Continuity Engine

Autonomous Survival, Evacuation, and Substitution Framework

1. Mandate

The Sagitta Continuity Engine is the **survival and continuity authority** of the Sagitta Protocol.

Its mandate is to preserve depositor protection, system solvency, and operational continuity under extreme conditions, including infrastructure failure, asset impairment, governance disruption, and external systemic events.

The Continuity Engine governs **how the protocol behaves when normal assumptions fail**.

---

2. Position Within the Sagitta System

The Sagitta Continuity Engine operates as an **overlay authority** across all protocol subsystems.

- The **Vault** records depositor balances and ownership
- The **Treasury** coordinates allocation, settlement, and monetary operations
- The **Reserve** insures deposits and absorbs systemic losses
- The **Autonomous Allocation Agent** evaluates strategies
- The **Escrow** executes and custodies capital
- The **Sagitta Continuity Engine** governs survival, evacuation, and substitution

The Continuity Engine does not participate in routine operations.
It defines **how authority is exercised when conditions deviate from expected bounds**.

---

3. Continuity Philosophy

Sagitta is designed to survive the failure of any single component, asset, or dependency.

The Continuity Engine encodes the principle that:

- systems degrade gracefully rather than collapse,
- dependencies are replaceable by role,
- capital protection takes precedence over optimization.

Continuity is treated as an **active system**, not a contingency plan.

---

4. Role-Based Substitution Doctrine

Sagitta treats all critical dependencies as **roles**, not identities.

Examples include:

- Stability Unit
- Treasury Token
- Reserve Asset
- Execution Venue
- Allocation Intelligence
- Governance Authority

Each role has:

- defined functional responsibilities
- acceptable substitution candidates
- migration procedures

The Continuity Engine authorizes **role substitution** when an implementation no longer satisfies system requirements.

This doctrine enables replacement without redesign.

5. Chain-Agnostic Posture

Sagitta is designed as a **chain-agnostic protocol**.

No blockchain network is treated as an indispensable dependency. All ledger environments are considered implementations of a **Settlement and Execution Role**, subject to substitution under continuity doctrine.

This posture ensures that protocol solvency, depositor protection, and operational continuity remain intact regardless of the condition of any single blockchain.

5.1 Blockchain as a Replaceable Role

Sagitta treats blockchains as **state and execution substrates**, not as sources of trust.

Each chain role is defined by:

- state availability
- transaction finality
- execution integrity
- censorship resistance

When a blockchain no longer satisfies these properties, it ceases to meet the role requirements and becomes eligible for substitution.

5.2 Blockchain Failure Coverage

The Sagitta Continuity Engine governs protocol behavior under blockchain-level failure conditions, including:

- chain halts or prolonged liveness failure
- consensus disruption or validator collapse

- censorship or transaction exclusion
- irrecoverable reorganization or state corruption

These events are classified as **infrastructure-level failures** and trigger continuity responses without reliance on governance intervention.

5.3 Evacuation and Substitution Doctrine

Upon blockchain failure classification, the Continuity Engine coordinates:

- suspension of execution and settlement on the affected chain
- snapshotting of last valid protocol state
- evacuation of capital from execution contexts where possible
- migration to an alternate chain role
- reconstitution of protocol state under the new substrate

Depositor balances and insured value remain invariant throughout this process.

5.3 Multi-Chain and Cross-Domain Readiness

Sagitta's architecture supports deployment across multiple chains and execution environments.

State representation, accounting logic, and authority boundaries are designed to be portable across:

- public blockchains
- permissioned ledgers
- hybrid execution environments

Chain selection reflects operational suitability rather than ideological commitment.

5.4 Survivability Guarantee

Chain failure does not constitute protocol failure.

Sagitta's continuity posture ensures that:

- depositor protection persists
- Reserve enforcement remains intact
- Treasury authority continues under substituted settlement
- protocol operation resumes after reconstitution

The protocol survives by **changing where it runs**, not by compromising what it guarantees.

---

6. Failure Classification and Detection

The Continuity Engine monitors protocol health through continuous state evaluation.

Failure conditions are classified across domains, including:

- asset impairment or depegging
- execution venue failure
- Reserve degradation
- governance paralysis
- infrastructure or oracle disruption

Each class maps to predefined continuity responses.

---

7. Continuity States

The protocol operates under defined **continuity states**.

Typical states include:

- **Normal Operation**
- **Constrained Operation**
- **Degraded Operation**
- **Evacuation Mode**
- **Reconstitution Mode**

State transitions are rule-driven and observable.

---

8. Evacuation Doctrine

Evacuation is the process of **withdrawing capital from risk-bearing or compromised environments** into protected custody.

When evacuation is triggered, the Continuity Engine coordinates:

- halting of new allocations
- suspension of execution activity
- recall of deployed capital from Escrow
- consolidation of assets into Stability Units or Reserve form
- freezing of non-essential state transitions

Evacuation prioritizes **speed, determinism, and capital integrity** over yield or optimization.

---

9. Asset Substitution Processes

When an asset role becomes impaired, the Continuity Engine initiates **substitution procedures**.

Examples include:

- replacing a Stability Unit experiencing depegging
- replacing a Reserve asset experiencing correlation failure

- migrating execution venues
- transitioning Treasury Token implementations

Substitution proceeds through:

1. snapshotting system state
2. valuation normalization
3. controlled migration
4. post-migration reconciliation

Depositor balances remain invariant throughout substitution.

---

10. Vault Failure Recovery

In the event of Vault system failure, the Continuity Engine coordinates **deposit reconstruction and restoration**.

This process includes:

- recovery of last valid depositor state
- Reserve-backed principal restoration
- migration to alternative custody or Vault implementations

Vault failure does not impair depositor claims.

---

11. Treasury and Monetary Continuity

Under continuity conditions affecting monetary operations, the Continuity Engine governs:

- suspension or adjustment of Treasury Token issuance
- modification of buyback and burn cadence
- prioritization of Reserve reinforcement

- preservation of allocation solvency

Monetary actions under continuity doctrine favor **capital preservation and system stability**.

---

12. Allocation Intelligence Degradation

The Continuity Engine governs analytical posture under stress.

Possible actions include:

- narrowing eligible strategies
- prioritizing Reserve-relative performance
- suspending adaptive learning
- freezing recommendation output

Analytical intelligence adapts to continuity state without altering depositor guarantees.

---

13. Escrow and Execution Recovery

For execution-layer disruption, the Continuity Engine coordinates:

- execution halts
- capital recall
- venue substitution
- jurisdictional rerouting

Capital isolation ensures that execution failures remain contained.

---

14. Reconstitution and Return to Normal Operation

After evacuation or substitution, the Continuity Engine oversees **system reconstitution**.

This includes:

- validation of new role implementations
- reconciliation of balances and accounting
- gradual reactivation of allocation activity
- restoration of normal cadence

Reconstitution proceeds only after solvency and protection thresholds are met.

---

15. Autonomy and Governance Interaction

The Continuity Engine operates autonomously within defined doctrine.

Governance defines:

- continuity thresholds
- substitution candidates
- evacuation permissions

Execution of continuity actions proceeds without discretionary delay.

This separation ensures decisive response under stress.

---

16. Standalone Deployment

The Sagitta Continuity Engine is deployable as a standalone survival framework.

It may operate as:

- a blockchain evacuation system
- a protocol continuity service

- an asset migration and substitution engine
- an autonomous failure response layer

Standalone deployment enables continuity protection beyond Sagitta.

---

17. Summary

The Sagitta Continuity Engine is the **guardian of survival**.

It:

- governs evacuation under failure
- enables role-based substitution
- preserves depositor protection
- coordinates recovery and reconstitution
- ensures the protocol endures beyond individual components

Sagitta does not assume permanence.
It **plans for replacement**.

Continuity is not an exception state.
It is a **designed capability**.

System Invariants

Constitutional Guarantees of the Sagitta Protocol

Purpose

System Invariants define the **non-negotiable properties** of the Sagitta Protocol.

They describe conditions that remain true across all operating states, market regimes, governance changes, and continuity events. These invariants govern system behavior and constrain all subsystems, upgrades, and policy decisions.

No mechanism, optimization, or authority supersedes these guarantees.

Invariant I — Depositor Principal Protection

Depositor principal is preserved across all protocol states.

Principal protection is enforced through a capitalized Reserve that functions as deposit insurance, including coverage for allocation underperformance, execution failure, asset impairment, and Vault system failure.

Depositor balances are restored through deterministic settlement and Reserve-backed mechanisms.

Invariant II — Insurance-Constrained Growth

Protocol growth is bounded by insured capacity.

Deposit acceptance, allocation sizing, and liquidity formation scale proportionally with Reserve coverage. Expansion occurs only as insured capacity increases through retained performance or explicit Reserve reinforcement.

Growth reflects solvency rather than demand.

Invariant III — Protocol-Level Loss Accountability

Losses are absorbed at the protocol level.

Allocation underperformance is reconciled through an ordered absorption framework involving yield variability, Treasury-retained capital, and Reserve assets. Downside responsibility remains with system capital rather than depositors.

Risk-taking produces consequence.

Invariant IV — Reserve Supremacy

The Reserve holds primacy over optimization.

Allocation decisions, monetary operations, and capital routing remain subordinate to Reserve health and coverage ratios. When Reserve integrity is threatened, allocation activity contracts and continuity actions engage.

Protection precedes performance.

Invariant V — Deterministic Settlement

All allocation outcomes settle deterministically.

Capital deployment occurs in discrete batches with defined initiation, execution, and settlement boundaries. Outcomes are reconciled through rule-based processes rather than discretionary intervention.

Settlement remains auditable, predictable, and final.

Invariant VI — Role-Based Dependency Design

All critical dependencies are defined by role.

Currencies, tokens, assets, execution venues, intelligence layers, and governance authorities are treated as replaceable implementations of functional roles. Each role maintains defined responsibilities and substitution paths.

No single dependency is indispensable.

Invariant VII — Separation of Authority

No subsystem holds unilateral control over depositor exposure.

Custody, allocation intelligence, execution, insurance, monetary authority, and continuity governance operate within isolated scopes. Authority is layered to prevent risk concentration and conflict of interest.

System safety emerges from separation.

Invariant VIII — Continuity Supremacy

Continuity overrides optimization.

Under failure or stress conditions, the Sagitta Continuity Engine governs evacuation, substitution, degradation, and reconstitution. Continuity actions preserve depositor protection and system solvency before restoring normal operation.

Survival is enforced by design.

Invariant IX — Token Optionality

Tokens are instruments, not dependencies.

Treasury Tokens and governance mechanisms operate as role-based tools within defined doctrine. Protocol solvency, depositor protection, and continuity remain independent of token price, liquidity, or market sentiment.

Value signaling does not equal survivability.

Invariant X — Governance Constraint

Governance operates within protocol law.

Governance defines parameters, thresholds, and doctrine but does not override system invariants. Emergency authority, continuity actions, and protection mechanisms remain bounded by predefined rules.

Governance participates in the system.
It does not redefine it.

Invariant XI — Survivability Under Component Failure

The protocol survives the failure of any single subsystem.

Vault, Treasury, Reserve, Allocation Intelligence, Escrow, tokens, governance, and infrastructure components are designed for isolation and replacement. Failure triggers containment, evacuation, and substitution rather than collapse.

Sagitta remains operational through reconstitution.

Invariant XII — Fiduciary Alignment by Structure

Fiduciary alignment is enforced structurally.

Principal protection, loss accountability, reserve-relative discipline, and constrained growth operate continuously through protocol law. Fiduciary behavior persists independently of operator intent or market conditions.

Trust emerges from structure.

Closing Declaration

These invariants define Sagitta’s identity.

All subsystems, upgrades, and integrations must preserve them. Any change that violates an invariant constitutes a protocol failure condition.

Sagitta does not rely on favorable markets, benevolent governance, or perpetual confidence.

It relies on **law, capital, and continuity**.

Failure / Threat Matrix

Continuity-Governed Response Mapping

Purpose

The Failure / Threat Matrix defines how the Sagitta Protocol responds to adverse conditions across financial, technical, and governance domains.

Each failure class is mapped to a governing authority and a deterministic outcome. The matrix demonstrates that **no failure mode results in depositor principal loss or uncontrolled system collapse**.

This matrix describes **what happens**, not **how it is implemented**.

Threat Classification Matrix

Failure / Threat Class	Description	Governing Authority	System Response	Depositor Outcome
Allocation Underperformance	Allocation batch returns less capital than deployed	Treasury + Reserve	Ordered loss absorption; reserve-relative settlement	Principal preserved; yield adjusted
Sustained Allocation Failure	Repeated underperformance across batches	Treasury + Reserve + AAA	Allocation contraction; strategy restriction; reserve prioritization	Principal preserved
Stablecoin Depeg	Stability Unit deviates materially from peg	Continuity Engine	Currency substitution; valuation normalization	Principal preserved in substituted unit
Reserve Asset Volatility	Reserve asset correlation or valuation shift	Reserve + Continuity Engine	Coverage recalibration; reserve reinforcement	Principal preserved
Vault Contract Failure	Vault accounting or contract fault	Continuity Engine + Reserve	State reconstruction; insured restoration	Principal restored
Escrow Execution Failure	Counterparty or venue failure during execution	Escrow + Continuity Engine	Capital recall; execution isolation; substitution	Principal preserved
Treasury Token Market Attack	Liquidity manipulation or hostile market activity	Treasury + Continuity Engine	Token isolation; lifecycle restriction	Allocation continues; principal preserved
Treasury Token Governance Capture	Token-based governance attack	Continuity Engine	Governance scope restriction; authority freeze	Principal preserved

DAO Governance Deadlock	Governance paralysis or quorum failure	Continuity Engine	Continuity authority enforcement	Principal preserved
Oracle Failure	Pricing or data feed disruption	Continuity Engine	Oracle substitution; conservative valuation	Principal preserved
Infrastructure Failure	Chain halt, RPC failure, or network outage	Continuity Engine	Execution halt; evacuation; reconstitution	Principal preserved
Multi-Component Failure	Concurrent subsystem failures	Continuity Engine	Evacuation; degradation; phased recovery	Principal preserved
Catastrophic System Event	Extreme external or systemic shock	Continuity Engine	Full evacuation; reserve enforcement; reconstitution	Principal preserved
Blockchain Failure	Chain halt, consensus failure, censorship, or irrecoverable network disruption	Continuity Engine	Execution halt; asset evacuation; chain substitution; state reconstitution	Principal preserved

Interpretation Guidance

- **Governing Authority** indicates which system enforces response
- **System Response** reflects doctrine-level action, not execution detail
- **Depositor Outcome** remains invariant across all threat classes

This matrix demonstrates that **every identified failure mode resolves to containment, substitution, or recovery**, never depositor impairment.

Design Implication

Sagitta does not optimize for uninterrupted yield.

It optimizes for:

- capital preservation
- deterministic response
- survivability under stress

Failure is treated as a **managed state**, not an exception.

Closing Statement

This matrix operationalizes the Sagitta System Invariants.

It ensures that:

- risk is bounded
- authority is predefined
- outcomes are predictable

Sagitta does not ask what happens *if* things fail.

It defines **what happens when they do**.

Capital Flow Diagram

Capital in Sagitta flows through custody, authority, execution, and insurance layers under deterministic settlement and continuity governance.

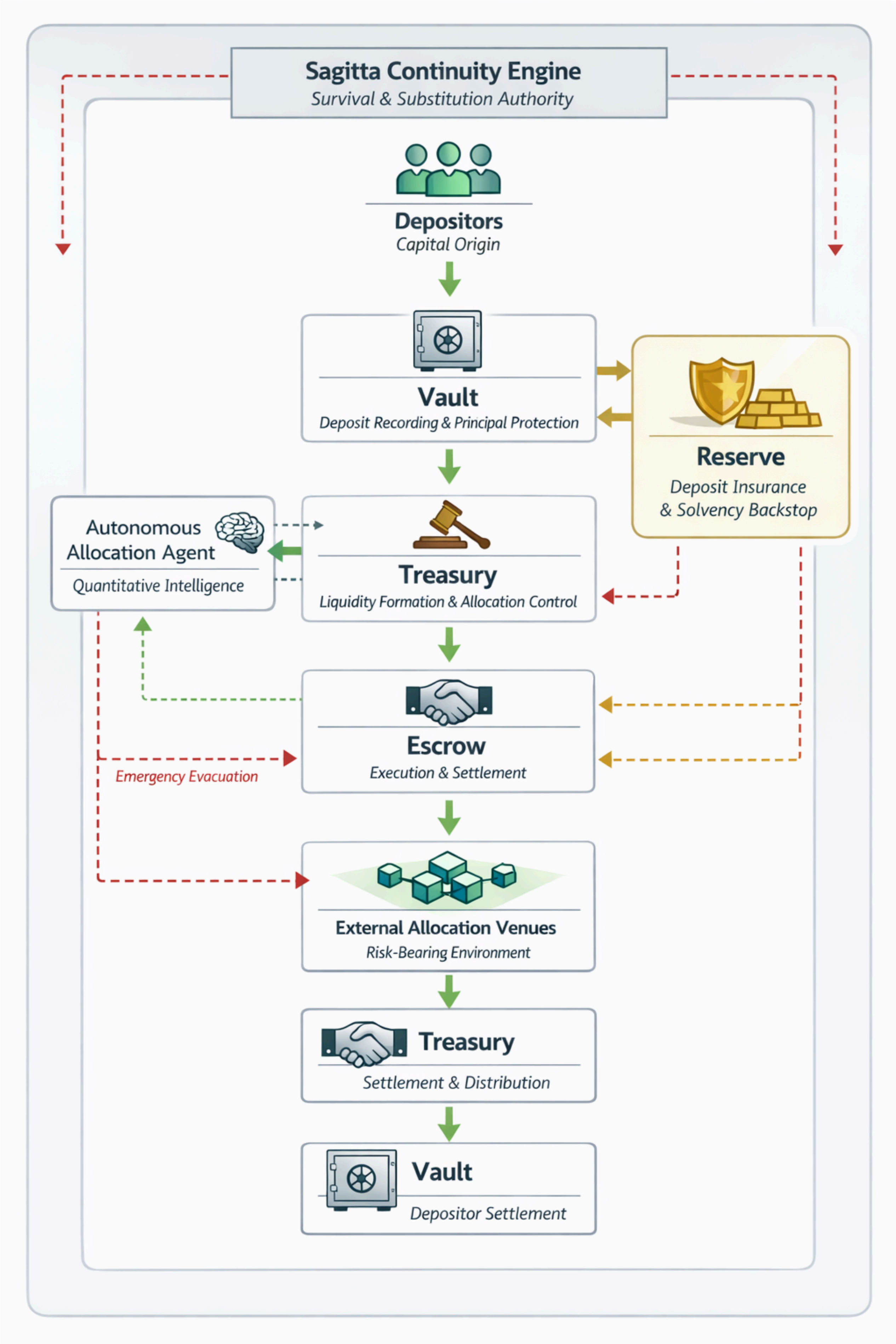
Diagram Purpose

The Capital Flow Diagram illustrates **how capital enters, moves through, and exits the Sagitta Protocol**, and which authority governs each stage.

The diagram emphasizes:

- separation of roles
- deterministic settlement
- insurance enforcement
- continuity supremacy

This diagram represents **lawful flow**, not optimization paths.


Sagitta Continuity Engine
Survival & Substitution Authority
Depositors
Capital Origin
Vault
Deposit Recording & Principal Protection
Reserve
Deposit Insurance
& Solvency Backstop
Autonomous
Allocation Agent
Quantitative Intelligence
Treasury
Liquidity Formation & Allocation Control
Escrow
Execution & Settlement
Emergency Evacuation
External Allocation Venues
Risk-Bearing Environment
Treasury
Settlement & Distribution
Vault
Depositor Settlement