ALVARA PROTOCOL & ALVA TOKEN

CRYPTO-ASSET WHITE PAPER

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1. EXECUTIVE SUMMARY

The Alvara Protocol ("Alvara" or the "Protocol") is a decentralized, non-custodial infrastructure protocol for the creation, deployment and on-chain management of tokenized investment baskets ("BSKTs"). Built on the ERC-7621 Basket Token Standard, an open standard authored by the Alvara team, the Protocol enables any user to design, launch and manage a diversified basket of crypto-assets on Ethereum and compatible networks, with full on-chain transparency, standardized accounting and composability with the broader DeFi ecosystem.

The Problem

Crypto-asset portfolio management today is fragmented, opaque and inaccessible. Centralized funds and managed accounts require trusted intermediaries, lock-up commitments and minimum investment thresholds that exclude the majority of participants. On-chain alternatives remain limited: existing basket or index protocols typically lack standardized accounting, transparent fee structures, competitive manager incentives and native trading infrastructure for basket positions.

The result is a market where portfolio diversification in crypto remains the preserve of sophisticated actors with significant capital, while the tooling available to emerging managers is inadequate for building credible, auditable track records.

The Solution

Alvara addresses these gaps through five user-facing product components, underpinned by decentralized governance:

1. **BSKT Lab**: The primary interface and smart contract infrastructure for designing, deploying and managing ERC-7621 BSKTs. Managers specify asset compositions, target weightings, fee structures and rebalancing parameters. Baskets are deployed as on-chain smart contracts holding underlying assets in a non-custodial structure.

2. **Staking Platform**: A mechanism through which ALVA holders lock tokens to obtain voting-escrowed ALVA ("veALVA"), participate in Protocol governance and receive a share of platform fees.

3. **Leaderboard**: A performance- and metric-driven ranking interface that surfaces the strongest managers based on transparent, on-chain data, creating a meritocratic environment where capital follows competence.

4. **BSKTX** (In Development): A decentralized trading venue and liquidity layer purpose-built for BSKT LP tokens, enabling price discovery and liquidity for basket positions.

5. **BSKT Marketplace** (In Development): An on-chain marketplace enabling the transfer of BSKT management rights and associated fee streams, creating a secondary market for proven strategies and track records.

Governance across the Protocol is provided by the **Alvara DAO**, the protocol-level decision layer through which veALVA holders vote on proposals, allocate ALVA rewards via gauge voting, and set key parameters. Governance currently operates via Snapshot and is transitioning to a fully on-chain DAO (see Section 16).

ALVA Token

ALVA is the Protocol's native ERC-20 utility token with a fixed maximum supply of 200,000,000. ALVA provides access to governance (via veALVA), staking rewards, gauge-weight voting for BSKT reward allocation, and access to Protocol services including analytics and backtesting tools. ALVA does not

represent equity, debt or a claim on the profits of Alvara Protocol Inc.

Traction

The Protocol is live on Ethereum mainnet. As of March 2026, the platform has completed 8 weekly governance epochs, with active baskets deployed and a functioning gauge-weight voting system distributing ALVA rewards to BSKT participants. The Protocol has been audited by three independent security firms: Quill Audits, CertiK and Adevar.

What Comes Next

Alvara's roadmap for 2026 includes expansion to additional blockchain networks (including Solana), multichain basket support enabling baskets to hold assets across multiple chains simultaneously, a manager verification system using social attestation and reputation scoring, and a transition from off-chain governance (currently Snapshot-based) to a fully on-chain DAO. See Section 16 for the full development roadmap.

2. OVERVIEW OF THE ALVARA PROTOCOL

2.1 Concept and Vision

"Alvara" is derived from the Latin "alvarium" (beehive) and conveys the notion of a coordinated, transparent and productive on-chain ecosystem. The Protocol facilitates the deployment and lifecycle management of tokenized investment baskets in a decentralized, permissionless environment.

Through its ERC-7621 Basket Token Standard and associated infrastructure, Alvara aims to:

- lower barriers to entry for basket managers;
- increase transparency and verifiability of on-chain baskets;
- provide a meritocratic environment in which managers compete based on performance and risk metrics;
- promote responsible diversification and risk management in crypto-asset portfolios;
- support composability with other DeFi protocols.

Alvara does not itself act as an asset manager, broker, custodian, investment adviser or other regulated financial service provider. Baskets are created and managed directly by users or by decentralized communities via DAOs, subject to applicable law.

2.2 Core Components

The Protocol consists of five user-facing product components, underpinned by a governance layer:

1. BSKT Lab The primary interface and smart contract infrastructure for designing, deploying and managing BSKTs. BSKT Lab handles the full lifecycle: creation, deposits, rebalancing, withdrawals and fee management.

2. Staking Platform The mechanism through which ALVA holders lock tokens to obtain veALVA, participate in governance and earn a share of protocol fees.

3. Leaderboard A native ranking system displaying on-chain performance, risk and other metrics for BSKTs. The Leaderboard enables capital allocators to evaluate managers based on transparent, verifiable

data.

4. BSKTX (In Development) A decentralized trading and liquidity venue for BSKT LP tokens and related pairs, enabling price discovery and secondary-market trading of basket positions.

5. BSKT Marketplace (In Development) A marketplace for the transfer of BSKT management rights and associated fee streams, creating a secondary market for proven strategies and track records.

Governance: Alvara DAO The protocol-level decision layer through which veALVA holders vote on proposals, allocate ALVA rewards and set key parameters. Governance currently operates via Snapshot voting; a fully on-chain DAO is in active development (see Section 16).

2.3 Competitive Positioning

Alvara operates in the on-chain asset management and basket/index protocol space alongside projects such as Set Protocol (TokenSets), Index Cooperative, Enzyme Finance and dHEDGE. Alvara differentiates through:

- **ERC-7621**: a purpose-built token standard for baskets, enabling standardized interfaces for deposits, withdrawals, rebalancing and accounting, as opposed to protocols that wrap bespoke logic around general-purpose token standards.
- **Integrated trading infrastructure**: BSKTX provides native liquidity for basket positions, rather than relying entirely on external DEXs.
- **Management rights marketplace**: BSKT Marketplace enables the transfer and sale of management positions, creating a secondary market for fund management capability itself.
- **Gauge-based reward allocation**: veALVA holders allocate ALVA emissions to BSKTs through weekly gauge voting, creating a competitive incentive layer analogous to the Curve/Convex model.
- **Manager verification** (launching Q2 2026): a reputation and attestation layer using Twitter/X verification and Gitcoin Passport scoring that provides identity assurance without requiring traditional KYC, balancing transparency with the permissionless ethos of DeFi.

2.4 Current Protocol Status

As of March 2026, the following components are **live on Ethereum mainnet**:

Component	Status
BSKT Lab (create, deposit, withdraw)	Live
BSKT rebalancing (manager-initiated)	Live
Emergency Stables	Live
ALVA token (ERC-20, Ethereum)	Live
ALVA on Avalanche C-Chain and Base (bridging + DEX liquidity)	Live
Staking Platform and veALVA	Live
Gauge-weight voting (via Snapshot)	Live
ALVA rewards distribution (Merkle claims)	Live
Leaderboard	Live
Manager verification (Twitter/X + Gitcoin Passport)	Q2 2026
BSKTX	In Development

Component	Status
BSKT Marketplace	In Development
On-chain DAO	In Development

Components **in development** are detailed in the Roadmap (Section 16).
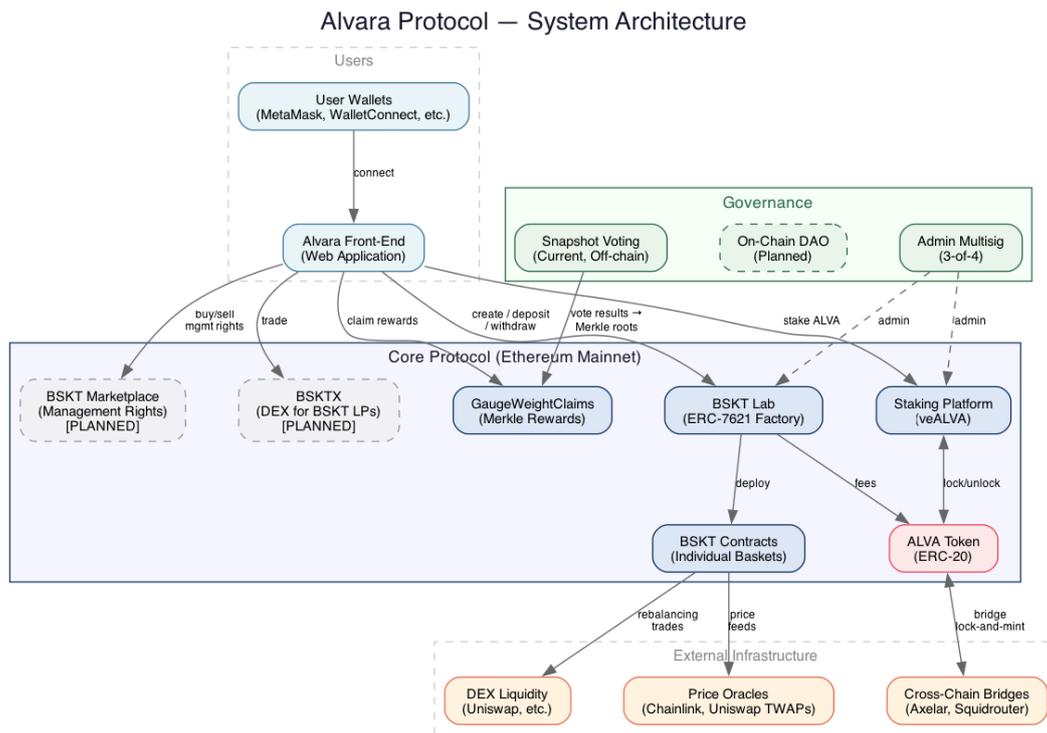
Figure 1: Alvara Protocol System Architecture

3. TECHNICAL FOUNDATIONS: TOKEN STANDARD, NETWORKS AND CUSTODY

3.1 ERC-7621 Basket Token Standard

The Protocol is structured around ERC-7621, an open token standard authored by the Alvara team for representing on-chain baskets of assets. ERC-7621 extends ERC-20 compatibility while introducing basket-specific functionality.

Design Principles

ERC-7621 is designed to enable:

- tokenized representation of diversified portfolios of crypto-assets and other tokenized assets;
- on-chain composability with DeFi protocols (lending, AMMs, yield aggregators);
- standardized interfaces for deposits, withdrawals and rebalancing;
- transparent, real-time accounting of underlying assets and liabilities;
- separation of management rights from LP positions.

Core Interface

Each ERC-7621 BSKT exposes the following key interfaces:

- **Basket management**: functions for setting and updating target asset allocations, triggering rebalancing, and configuring basket parameters (fee rates, slippage tolerances, rebalancing modes).

• **Deposit and withdrawal**: standardized entry and exit functions that calculate Net Asset Value (NAV), apply fees, execute asset swaps and mint or burn LP tokens accordingly.

• **Accounting**: on-chain queryable functions for retrieving current asset holdings, target weights, actual weights, accrued liabilities and NAV per LP token.

• **Access control**: management-rights tracking that distinguishes the basket manager (who can rebalance, adjust parameters) from LP holders (who hold economic exposure).

Relationship to Other Standards

Standard	Purpose	Relationship to ERC-7621
ERC-20	Fungible token	BSKT LP tokens are ERC-20 compatible
ERC-4626	Tokenized vaults	ERC-7621 extends the vault concept to multi-asset baskets with rebalancing logic and management separation
ERC-1155	Multi-token	Not used; ERC-7621 uses a one-contract-per-basket model for isolation

Each BSKT is deployed as an independent smart contract, holding its underlying assets directly. This isolation model ensures that a vulnerability or management failure in one BSKT cannot directly affect another.

3.2 Blockchains and Cross-Chain Capability

Ethereum (Live)

Ethereum is the home network of the Protocol and the ALVA token. ALVA is deployed as an ERC-20 token on Ethereum. Core Protocol contracts currently live on Ethereum mainnet include BSKT Lab, the Staking Platform, the Leaderboard and the gauge-weight reward system. BSKTX and the BSKT Marketplace are in development and will also be deployed on Ethereum (see Section 16).

Avalanche C-Chain and Base (Live)

ALVA is available on Avalanche C-Chain and Base, with DEX liquidity and trading active on both networks. ALVA can be bridged between Ethereum, Base and Avalanche via cross-chain bridging solutions (Axelar / Squidrouter) using a lock-and-mint model: tokens are minted on the destination chain only when corresponding tokens are locked in the bridge contract on Ethereum, and burned when bridging back. BSKT Lab deployment on Base is planned for Q1 2026.

Additional Networks (Planned)

The Protocol's roadmap includes expansion to additional networks, including Solana and BNB Chain (see Section 16). Cross-chain functionality introduces additional technical and regulatory risks, including those associated with bridge contracts and differing network characteristics. See Section 21 for risk disclosures.

3.3 Decentralization and Non-Custodial Design

The Protocol is non-custodial. Users interact with on-chain smart contracts directly from their own compatible wallets. Alvara does not take possession of, or control over, users' private keys or assets. Non-custodial design does not eliminate risks, including smart contract vulnerabilities, user error or adverse regulatory developments.
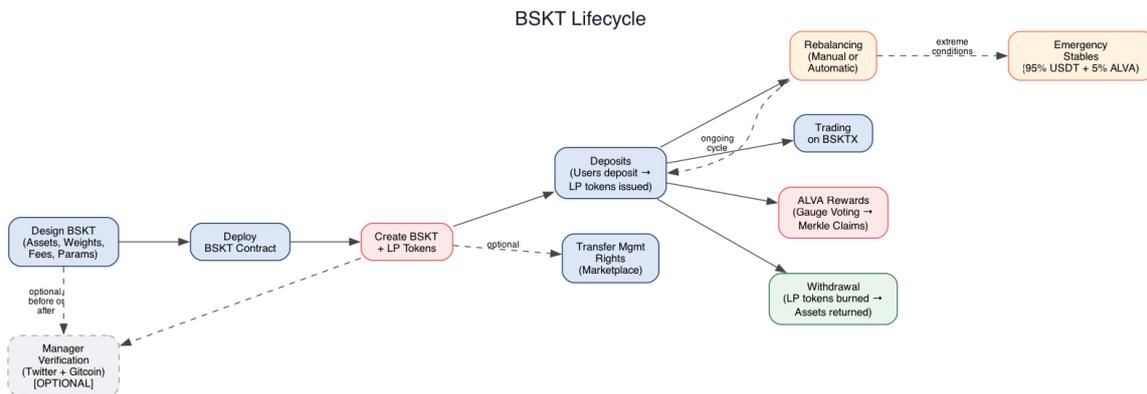
Figure 2: BSKT Lifecycle Flow

4. BSKT LAB AND ERC-7621 MECHANICS

4.1 BSKT Design and Deployment

The BSKT Lab is the primary interface for designing and deploying BSKTs. Key design steps include:

Wallet Connection and Configuration Users connect a compatible wallet and specify token contracts and target weightings for the basket's underlying assets.

Manager Verification (Launching Q2 2026) A manager verification system is being introduced in Q2 2026. Once live, managers will be able to complete a verification process that includes:

- **Twitter/X verification**: managers link and verify ownership of their Twitter/X account, providing social accountability and a public identity tied to their basket management activity.

- **Gitcoin Passport verification**: managers submit a Gitcoin Passport score, which aggregates attestations from multiple identity providers (e.g. proof of personhood, GitHub activity, ENS ownership) to demonstrate that the manager is a unique, real participant rather than a sybil actor.

Manager verification is not equivalent to KYC or AML screening. It is a reputation and attestation layer designed to increase trust and accountability without requiring the collection of personal identity documents. Unverified managers will still be able to deploy baskets, but verified managers will receive preferential visibility on the Leaderboard and eligibility for additional Protocol incentives. Until the verification system launches, all managers can deploy baskets permissionlessly via BSKT Lab.

ALVA Allocation On Ethereum mainnet, every BSKT created through the default BSKT Lab flow is required to include a minimum 5% allocation to ALVA by basket value. This applies to all baskets created on the current Ethereum deployment. The mandatory inclusion results in market purchases of ALVA during basket creation and deposit transactions. A planned update (see Section 16) will make this allocation configurable per network and per basket, allowing BSKT creators to adjust or waive the ALVA requirement in exchange for additional fees.

Minimum Initial Deposit A minimum initial deposit of 0.1 ETH equivalent is required to create a BSKT, with parameters adjustable per network.

Metadata and Presentation BSKT creators provide metadata (e.g. name, symbol, description and icon) to identify and contextualize the basket.

Upon deployment, the BSKT smart contracts:

- hold underlying assets in a non-custodial, on-chain structure;
- issue a **BSKT token** (an ERC-7621 token representing the basket itself, including management rights) to the creator;
- issue **BSKT LP tokens** (ERC-20 tokens representing the creator's pro-rata economic share of the basket's assets) to the creator; and
- record configurable parameters (including management fees, rebalancing rules and governance logic).

The Alvara token stack consists of three distinct token types:

Token	Standard	Represents	Held by	Transferable
BSKT token	ERC-7621	Basket management rights (rebalance, adjust params, collect fees)	Basket creator/manager	Yes (via Marketplace)
BSKT LP token	ERC-20	Pro-rata economic exposure to basket assets	All depositors	Yes
AX LP token	ERC-20	Share of a BSKTX liquidity pool (planned)	Liquidity providers	Yes

Management rights (BSKT token) can be transferred independently from economic exposure (BSKT LP tokens) via the BSKT Marketplace (see Section 10).

4.2 Rebalancing and Basket Management

Rebalancing mechanisms determine how a BSKT's actual asset weights are adjusted over time to maintain alignment with its target strategy. Each BSKT defines a target allocation across its eligible assets. Over time, market movements and user flows cause actual portfolio weights to drift from these targets. The rebalancing mechanism brings each BSKT back in line with its intended strategy while controlling for slippage and gas costs.

4.2.1 Current Implementation (Live)

In the current implementation, rebalancing is manager-initiated and fully manual:

- The BSKT manager triggers a rebalance transaction at any time.
- When a rebalance is executed, the smart contract sells the existing constituent assets and repurchases them according to the basket's target weights, subject to the configured slippage tolerance.
- If the trade cannot be executed within the allowed slippage tolerance, the transaction reverts and the manager is prompted to adjust parameters (for example by increasing the slippage tolerance or reconfiguring the target allocation).

This implementation guarantees that the basket can be restored to its target allocation but can be gas-inefficient in certain market conditions, as it realises a full rebalance even when smaller incremental adjustments would suffice.

4.2.2 Planned: Automatic Rebalancing

The Protocol is being extended to support automatic rebalancing with the following design principles:

- **Periodic rebalancing:**

Each BSKT may opt into an automatic periodic rebalance schedule. The default cadence is expected to be approximately monthly, with the precise interval configurable per basket via its governance. When automatic rebalancing is enabled, the next qualifying transaction interacting with the BSKT (for example, a deposit or withdrawal) may trigger the rebalance, with the associated gas costs incorporated into that transaction.

- **Threshold-based rebalancing:**

In addition to periodic rebalancing, baskets may define drift thresholds such that if any asset's actual weight deviates from its target weight by more than a configured percentage (e.g. 5–10 percentage points), a rebalance is eligible to be triggered. Threshold parameters and their activation are controlled by basket governance.

- **Execution and slippage controls:**

Rebalancing trades are routed through the 1inch aggregator, which sources liquidity across multiple DEXs and liquidity pools to achieve optimal execution. Each rebalance honours a maximum slippage parameter configured at the basket level. If price impact or available liquidity would imply slippage beyond the cap, the rebalance reverts. Future versions may support:

- partial execution with progressive rebalancing; and
- per-trade caps on the proportion of pool liquidity consumed.
- **Rebalancing incentives:**

In the initial version of automatic rebalancing, the gas cost of the rebalance is borne by the first user whose transaction triggers the scheduled rebalance. The Protocol intends to explore explicit incentive mechanisms, such as rebates, small protocol-funded rewards, or allocation of emissions, to compensate users or third-party keepers who perform rebalancing on behalf of the pool.

4.2.3 Emergency Stables (Live)

In extreme market conditions, each BSKT manager has access to an Emergency Stables function:

- When invoked, the basket's constituent assets are sold into approximately 95% USDT and 5% ALVA. The 5% ALVA allocation is retained to ensure the basket continues to hold at least two assets, avoiding single-asset composition which could raise regulatory classification concerns. The 95% stablecoin allocation maximises capital preservation during market stress.
- This mechanism provides a rapid, on-chain way to de-risk the basket and protect LPs from further volatility in the underlying assets.
- The Emergency Stables function can be called either by a discretionary manager or, in the case of DAO-controlled baskets, by the entity or multisig currently holding the basket's management rights.

Planned enhancements include governance controls and rate limits on Emergency Stables usage, a "pause deposits" mode that temporarily disables new deposits while allowing withdrawals, and more granular controls around partial de-risking (e.g. shifting only a subset of assets to stablecoins).

4.2.4 Target Weights and Tolerance Bands

Each BSKT defines target portfolio weights w_i for its underlying assets. In practice, actual weights may deviate from targets due to price movements of underlying assets.

In the current implementation, rebalancing restores the basket to its exact target weights in a single transaction (see Section 4.2.1). A planned enhancement will introduce tolerance bands around target weights, allowing the Protocol to skip rebalancing trades for assets whose weight is within a configured threshold of their target. This will reduce unnecessary trading, gas costs and slippage in situations where

drift is minor.

4.2.5 Rebalancing Modes

The Protocol supports, or will support, the following rebalancing modes:

Mode	Status	Description
Discretionary	**Live**	Manager-triggered manual rebalancing
Periodic	**Planned**	Rebalancing at predefined intervals (daily, weekly, monthly)
Threshold-based	**Planned**	Rebalancing when asset weights drift beyond configured thresholds

The specific combination and parameters of these modes for a given BSKT are part of its configuration and may be modified over time via governance.

4.2.6 Trade Sizing and Slippage Controls

To mitigate market impact and adverse execution, rebalancing trades are subject to:

- maximum trade size limits per asset and per rebalancing event;
- slippage limits on individual trades, based on on-chain price observations and configured tolerances;
- preferred venue routing, for example prioritising deeper liquidity pools.

If slippage limits are breached or liquidity is insufficient, the rebalancing operation is deferred or aborted, depending on the logic implemented for the specific BSKT.

4.2.7 Governance and Custom Strategies

BSKT creators and DAOs may design bespoke rebalancing logic consistent with their investment thesis, including:

- static-weight index-style strategies;
- trend-following or volatility-targeting strategies; or
- strategies that incorporate signals from external data sources, where technically feasible and legally permitted.

Such custom strategies must still operate within the constraints of the Protocol's security, oracle and risk-management frameworks. Where rebalancing logic is materially complex or non-standard, this should be clearly communicated to prospective BSKT LP holders.

4.2.8 Rebalancing Risks

Rebalancing may introduce:

- transaction costs and slippage;
- potential tracking error versus target allocations; and
- risk that trades are executed at unfavourable prices during volatile conditions.

Users should be aware that a BSKT's realised performance may differ from that of a hypothetical, frictionless strategy with the same nominal target weights.

4.3 Asset Eligibility and Listing Guidelines

The Alvara Protocol supports a wide range of tokenised assets. The Protocol applies eligibility and risk criteria when selecting assets for inclusion in BSKTs, particularly where default configurations or templates

are made available to users.

4.3.1 Eligibility Criteria

Without limiting governance discretion, assets considered for inclusion in BSKTs are generally expected to satisfy one or more of the following:

- **Technical compatibility**: the asset is implemented as a standard token type on the relevant network (for example, ERC-20 on Ethereum) and has no known critical implementation defects.
- **Sufficient liquidity**: the asset has adequate on-chain or off-chain liquidity to support expected deposit, withdrawal and rebalancing flows without excessive slippage under normal market conditions. Minimum liquidity thresholds are set at the Protocol level and may be adjusted by governance.
- **Reliable pricing**: the asset has at least one viable price source (for example, an established AMM pool with sufficient depth or an external oracle feed) that can be integrated into the BSKT's pricing framework.
- **Transparent token economics**: the asset's supply, minting/burning rules and key parameters are clearly documented and not subject to arbitrary change.
- **Oracle coverage**: at least one supported price feed must be available and actively maintained for the asset on the relevant network.

Additional criteria may apply to specific asset types (for example, real-world asset tokens).

4.3.2 Exclusions and Higher-Risk Categories

Governance may decide that certain asset categories are unsuitable for inclusion in default or recommended BSKTs, including:

- tokens with opaque or centralised mint/burn or pause capabilities without appropriate timelocks;
- assets lacking adequate liquidity or reliable price sources;
- tokens associated with known security issues, unresolved exploits or severe governance failures;
- assets with insufficient volume history (e.g. less than 30 days of continuous trading); and
- assets that would cause a BSKT to fall within a different regulatory classification (for example, certain forms of tokenised securities), unless specifically intended and compliant with applicable law.

BSKT creators remain technically able, subject to Protocol constraints, to propose baskets including higher-risk assets. However, such baskets may be subject to additional governance, disclosure or access limitations.

4.3.3 Asset Onboarding and Removal

Asset eligibility is managed through:

- **Protocol-level whitelists**: lists of assets that can be included in BSKTs using standard BSKT Lab templates. The whitelist is currently maintained by the admin multisig and will transition to Alvara DAO governance as the on-chain DAO is deployed. Assets are added when they meet eligibility criteria and removed when flagged by governance.
- **BSKT-level configuration**: additional assets that a particular BSKT may include, subject to BSKT DAO approval or, where no BSKT DAO exists, the basket manager's discretion.
- **Delisting and removal**: mechanisms to prevent new exposure to assets deemed no longer suitable (for example, following a security incident or regulatory development).

Where an asset is removed from eligibility lists, governance should consider the impact on existing BSKTs and, where necessary, define a transition or unwinding process.

Nothing in this section should be interpreted as a representation that any particular asset is safe, risk-free or suitable for any particular user. Asset selection remains at the discretion of BSKT creators, DAOs and individual users.

4.4 Deposits and Withdrawals

The BSKT lifecycle uses the following canonical terminology:

Action	Description
Create	Deploy a new BSKT with initial assets. Incurs a 0.50% Protocol fee (same allocation as deposits). The creator receives BSKT LP tokens and management rights.
Deposit	Add assets to an existing BSKT. The depositor receives new BSKT LP tokens proportional to their deposit.
Withdraw	Redeem BSKT LP tokens for underlying assets or a reference asset (e.g. ETH or stablecoin). LP tokens are burned.
Rebalance	Adjust the BSKT's actual holdings to match target weights. Manager-initiated (see Section 4.2).

Deposit Mechanism

Users deposit assets into an existing BSKT via the BSKT Lab. Deposit transactions:

- are executed at Net Asset Value ("NAV"), subject to slippage, fees and market conditions;
- incur a Protocol fee of 0.50%, allocated as follows: 0.40% to the Foundation, 0.05% to the Staking Rewards Vault (SRV) and 0.05% to buy-back-and-burn;
- result in issuance of new BSKT LP tokens to the depositor.

Withdrawal Mechanism

Users withdraw from a BSKT by redeeming BSKT LP tokens for the underlying assets or, where supported, a reference asset such as ETH or a stablecoin. Withdrawal:

- incurs a Protocol fee of 0.50%, with the same allocation as deposits;
- is subject to available liquidity, gas costs, smart contract rules and network conditions;
- results in the burning of the redeemed BSKT LP tokens.

4.5 Management Fees and Liabilities

A default management fee of 1% of Assets Under Management per annum is charged at the BSKT level and paid to the BSKT manager. The fee accrues continuously within the NAV calculation (reducing the NAV per LP token over time) and is crystallised periodically when the manager claims accrued fees via a smart contract function. This fee and other operational parameters may be adjusted via BSKT DAO governance where implemented, or by the manager where no DAO exists.

BSKT liabilities may include, among others:

- management and performance fees;
- legal, accounting and audit costs;
- marketing and operational costs;
- DEX/CEX listing, liquidity and market-making costs;
- technology and security costs.

No assurance is given that any particular BSKT will remain solvent, liquid or operationally viable. The TER (Total Expense Ratio) of each BSKT should be assessed by prospective depositors based on up-to-date disclosures and on-chain data.

4.6 NAV Calculation

An Alvara BSKT NAV represents the net value of its BSKT LP tokens and is calculated as the total value of the BSKT assets minus the total value of its liabilities, divided by the number of BSKT LP tokens.

For all BSKTs trading on BSKTX, the NAV is used to determine whether BSKT LP tokens are trading at a premium or a discount. If market price > NAV then the BSKT LPs are trading at a premium; if market price < NAV then the BSKT LPs are trading at a discount.

Correct determination of the NAV is critical as it is the calculation used for deposit and withdrawal pricing.

For a given BSKT at time t:

```
NAV per LP(t) = ( Σ_i [ q_i(t) × P_i(t) ] − L(t) ) ÷ N_LP(t)
```

where:

- **q_i(t)** is the quantity of underlying asset i held by the BSKT at time t;
- **P_i(t)** is the reference price for asset i at time t (for example, mid-market price from a designated DEX or price oracle);
- **L(t)** is the total value of the BSKT's liabilities (including accrued management fees and other expenses); and
- **N_LP(t)** is the total number of BSKT LP tokens outstanding.

4.7 BSKT Token Liabilities and TER Calculation

Over an accounting period T, the Total Expense Ratio (TER) of a BSKT is a measure of its operational efficiency:

```
TER = ( E(T) ÷ A_avg(T) ) × 100%
```

where:

- **E(T)** is the total expenses incurred by the BSKT during period T (including management fees, trading fees and other operating costs as applicable);
- **A_avg(T)** is the average net assets of the BSKT during period T, typically calculated as the average of NAV-based asset values at regular intervals.

Typical expense items that may be included in E(T) for a given BSKT include, where applicable:

- blockchain transaction (gas) costs associated with rebalancing and basket operations;
- protocol and platform fees;
- auditor and professional fees incurred at the basket level;
- third-party service fees (for example, data or pricing services used specifically by that basket);
- any other properly incurred basket-level operating costs.

These cost categories vary by BSKT. Where basket-specific expenses are material, they should be disclosed in that BSKT's documentation or interface.

4.8 Yield Strategies (Planned)

Yield strategies are not currently supported. BSKTs hold their underlying assets directly and do not deploy capital into third-party DeFi protocols.

A planned future enhancement will allow BSKTs, where permitted by their configuration and governance, to allocate some of their underlying assets into third-party protocols (for example, lending markets or yield aggregators) to generate additional yield. When implemented, such strategies would be subject to strict constraints including on-chain transparency, liquidity preservation for withdrawal flows, and explicit risk management parameters governed by the relevant BSKT manager or DAO.

The Alvara Protocol does not guarantee the performance of any future yield strategy, and third-party protocol risk would remain with BSKT LP holders.
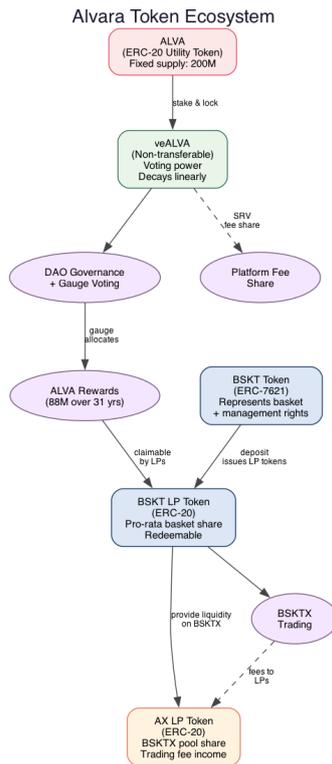
Figure 3: Alvara Token Ecosystem

5. ALVARA TOKENS

5.1 ALVA Token

Overview

ALVA is the Protocol's native ERC-20 utility token. It provides economic incentives and governance participation mechanisms within the Alvara ecosystem. Key characteristics include:

- **Token standard**: ERC-20 on Ethereum.
- **Maximum total supply**: 200,000,000 ALVA. The total supply is fixed and no inflationary minting mechanism exists.
- **Bridge mechanics**: The bridged ALVA token (currently on Avalanche C-Chain and Base) uses a lock-and-mint model. Tokens are minted on the destination chain only when corresponding tokens have been locked in the bridge contract on Ethereum. When bridging back to Ethereum, bridged tokens are burned and the originals are unlocked. This preserves the fixed total supply.
- **Burning**: ALVA can be burned via smart contract mechanisms, including buy-back-and-burn operations funded from platform fees.
- **Transferability**: ALVA is freely transferable on Ethereum and any other supported network or trading venue, subject to applicable law and technical limitations.

Intended Classification under MiCA

ALVA is intended to function as a utility token within the meaning of MiCA, providing digital access to specific Protocol functionalities. It is not intended to be an asset-referenced token or e-money token. ALVA does not represent a claim on the assets or profits of Alvara Protocol Inc. and does not confer equity, debt or similar financial rights.

Notwithstanding this intention, regulatory authorities may adopt a different classification in particular jurisdictions or in light of future guidance. Any such classification may impose additional requirements or restrictions on the Protocol and on holders of ALVA.

5.1.1 Token Utility

ALVA has the following main utilities within the Alvara ecosystem:

1. Governance and Voting Power

Holders stake and lock ALVA in the Staking Platform to obtain veALVA. veALVA is used to:

  • vote on Protocol proposals within the Alvara DAO;
  • participate in gauge-weight voting, where veALVA is allocated on a weekly basis to BSKTs in order to determine the distribution of ALVA rewards.

2. Access to Staking Rewards

ALVA holders who stake and lock ALVA via the Staking Platform become eligible to receive a pro-rata share of fees allocated to the Staking Rewards Vault (SRV), as further described in Section 8. No guarantee is given as to the level or continuity of such fees or rewards.

3. BSKT Inclusion and Protocol Services

On Ethereum mainnet, every BSKT is required to include a minimum 5% allocation to ALVA by basket value. This mandatory inclusion results in market purchases of ALVA during basket creation and deposit transactions. A planned update will make this allocation configurable per network, allowing BSKT creators to adjust or waive the ALVA requirement in exchange for additional fees, which are allocated to buy-back-and-burn operations or other Protocol purposes.

ALVA may also be used as a payment or access token for Protocol-level services, such as advanced analytics, backtesting tools or premium interfaces.

No Right to Dividends or Profit Share

Holding ALVA does not entitle the holder to dividends, profit sharing, or any form of ownership interest in Alvara Protocol Inc. or any related entity. Any fee sharing, staking rewards or other token flows described in this White Paper are discretionary mechanisms that may be amended, reduced, suspended or terminated in whole or in part via Alvara DAO governance or due to legal, regulatory or technical reasons.

5.1.2 Token Distribution

The initial distribution of ALVA is as follows:

Category	Allocation
Seed Round	4%
Private Round	4%
Public Round	4%
Airdrop	2%
Strategic Partners	2%

Category	Allocation
Team & Contributors	15%
Grants & Builder Rewards	5%
Foundation	10%
Affiliates & Marketing	5%
DEX/CEX Liquidity	5%
BSKT Incentives	44%
Total	**100%**

Vesting schedules, lock-ups and cliff periods are enforced via smart contract logic. The current vesting schedule is as follows:

Category	%	Tokens	TGE Unlock	Cliff	Linear Vesting
Seed Round	4%	8,000,000	0%	6 months	24 months
Private Round	4%	8,000,000	0%	3 months	18 months
Strategic Partners	2%	4,000,000	0%	3 months	14 months
Public Round	4%	8,000,000	25% (2M)	None	4 months
Airdrop	2%	4,000,000	0%	1 month	1 month
Team & Contributors	15%	30,000,000	0%	12 months	33 months
Grants & Builder Rewards	5%	10,000,000	0%	DAO-determined	DAO-determined
Foundation	10%	20,000,000	0%	6 months	12 months
Marketing & Affiliate	5%	10,000,000	0%	1 month	12 months
DEX/CEX Liquidity	5%	10,000,000	100% (10M)	None	None
BSKT Incentives	44%	88,000,000	0%	DAO-determined	31 years

Circulating supply at TGE was approximately 12,000,000 ALVA (6% of total supply), consisting of Public Round TGE unlock (2,000,000) and DEX/CEX Liquidity (10,000,000). All other allocations, including Strategic Partners, were fully locked at TGE.

These parameters may be amended via Alvara DAO governance, subject to applicable law. Readers should verify current vesting state against the deployed vesting contracts and the official Alvara repositories.

5.1.3 Rights and Obligations of Token Holders

Rights

Subject to applicable law, technical constraints and Protocol governance, holders of ALVA have the following rights:

• **Governance Participation**: ability to stake and lock ALVA to obtain veALVA; and ability to use veALVA to vote on Protocol proposals and gauge allocations.

- **Access to Protocol Services**: ability to use ALVA to access specific tools, interfaces or services where required (e.g. analytics, backtesting, premium features).
- **Participation in Staking Rewards**: where ALVA is staked and locked, ability to claim rewards from the SRV in accordance with the relevant smart contracts and Protocol parameters.
- **Economic Exposure**: purely economic exposure to the market value of ALVA as determined by supply and demand on secondary markets.

Obligations

Holding ALVA does not impose any contractual payment or performance obligations on the holder vis-à-vis Alvara Protocol Inc. beyond compliance with applicable law, the Protocol's terms of use and relevant smart contract rules. Holders are responsible for:

- ensuring compliance with all applicable laws and regulations in their jurisdiction;
- bearing all risks associated with holding and transacting in ALVA;
- securing their own private keys and wallet infrastructure.

Modification of Rights

The parameters governing the utilities, fees, rewards and governance mechanics associated with ALVA (including those described above) may be modified from time to time through Alvara DAO governance, subject to applicable law. Such changes may be material and may reduce or eliminate particular utilities or benefits associated with ALVA.

Transferability and Restrictions

ALVA is intended to be freely transferable on supported networks, subject to:

- network conditions and smart contract logic;
- any technical safeguards implemented to mitigate malicious activity (e.g. greylisting features in initial deployment contracts, which are intended to be renounced once no longer necessary); and
- any restrictions arising from applicable securities, AML/CFT or other regulations.

No Investor Protection or Guarantee Schemes

ALVA holders do not benefit from any investor compensation scheme, deposit guarantee scheme or similar protection under EU law or the laws of any other jurisdiction.

5.2 veALVA

veALVA (voting-escrowed ALVA) is a non-transferable governance token obtained by staking and locking ALVA in the Staking Platform. veALVA:

- confers voting rights within the Alvara DAO;
- determines the weight that holders can allocate in gauge voting for BSKT rewards;
- is subject to linear decay over the lock-up period, except for the "Forever (Burn)" option described below.

The "Forever (Burn)" lock permanently destroys the staked ALVA tokens. The tokens are sent to a burn address and removed from circulating supply irreversibly. In exchange, the user receives 200 veALVA per 100 ALVA burned, with no decay. The veALVA balance persists indefinitely.

The economic rationale for this option is as follows. The 200 veALVA per 100 ALVA exchange rate (2x the 12-month lock) reflects the permanent sacrifice of the underlying asset. Unlike time-locked stakers who recover their ALVA at expiry, burn-lock participants permanently reduce circulating supply, creating a deflationary benefit for all remaining holders. The 50% SRV pool allocation to this tier incentivises long-term, permanent commitment and ensures that the most aligned participants (those who have

irreversibly committed capital) receive the largest share of protocol fee income.

To prevent governance concentration, the veALVA from burn locks carries the same per-token voting weight as any other veALVA. There is no additional multiplier on governance power beyond the 2x veALVA issuance ratio. The 50% SRV allocation is split pro rata among all burn-lock participants, meaning individual reward share decreases as more users enter the burn pool.

These parameters (200 veALVA per 100 ALVA, 50% SRV allocation) are the current live values on Ethereum mainnet and may be adjusted via Alvara DAO governance. Because the ALVA is permanently destroyed, the burn lock is an irreversible decision that cannot be undone.

veALVA does not represent a separate asset or claim. It is a mechanism for calculating and allocating voting power within the DAO. All economic risk associated with ALVA remains with the ALVA holder.

5.3 ERC-7621 Basket Tokens (BSKTs)

Each BSKT is an ERC-7621 token representing a basket of underlying tokenized assets. The BSKT's properties (such as composition, rebalancing logic, governance structure and fee parameters) are determined at deployment and may be amended subsequently via the relevant BSKT's manager or DAO, where applicable.

Alvara does not guarantee that any particular BSKT will be compliant with applicable law in any jurisdiction. BSKT creators, managers and participants are responsible for ensuring that their activities comply with all relevant legal and regulatory requirements, including any licensing, registration, marketing or investor protection obligations.

5.4 BSKT LP Tokens

When users deposit assets into a BSKT via the BSKT Lab, they receive BSKT LP tokens representing their pro-rata share of the basket. BSKT LP tokens:

- are ERC-20 tokens;
- can generally be redeemed (subject to network conditions, liquidity and smart contract design) for (i) underlying assets or (ii) a reference asset such as ETH or a stablecoin;
- may confer governance rights within a BSKT-specific DAO, where implemented.

5.5 BSKTX LP Tokens (AX LPs)

Users providing liquidity to BSKT-related pools on BSKTX receive AX LP tokens representing their share of the liquidity pool. AX LP tokens entitle the holder to a proportionate share of trading fees within the pool, subject to Protocol parameters and smart contract logic. AX LP tokens themselves are ERC-20 tokens and may, subject to risk and liquidity, be used in other DeFi applications.

5.6 Tokenomics and Platform Fees

5.6.1 Foundation Treasury

The Alvara Foundation (or an equivalent structure) holds and manages a treasury consisting of ALVA and other assets (e.g. ETH, stablecoins). The treasury is funded from:

- an initial allocation of 10% of ALVA supply (20,000,000 ALVA), subject to vesting; and
- a share of Protocol fees, including:
- a portion of BSKT Lab transaction fees;
- a portion of BSKTX trading fees; and

• a portion of BSKT Marketplace trading fees.

Treasury assets may be used to support Protocol development, governance, security, legal and compliance efforts, ecosystem initiatives and other purposes as determined by Alvara DAO governance.

5.6.2 Staking Rewards and Fee Distribution

A portion of Protocol fees (10% of BSKT Lab fees, see fee table in Section 15) is allocated to the Staking Rewards Vault (SRV) and distributed to ALVA stakers, segmented by lock-up duration, in accordance with smart contract rules. The fee allocation percentages and distribution mechanics may be adjusted over time through governance.

5.6.3 Buy-Back-and-Burn Program

Subject to applicable law and market conditions, Alvara operates a buy-back-and-burn mechanism, pursuant to which a fixed percentage of platform fees (10% of BSKT Lab fees, see fee table in Section 15) is used to purchase ALVA on the open market and permanently burn it. This mechanism introduces a deflationary element to ALVA's tokenomics but does not guarantee any increase in the Token's value or market price. Governance may amend, suspend or terminate this mechanism at any time.

6. PRICE ORACLES AND DATA SOURCES

Accurate and robust pricing inputs are essential for calculating BSKT Net Asset Value (NAV), triggering rebalancing and evaluating performance. The Alvara Protocol is designed to be oracle-agnostic, allowing different BSKTs to use different price sources within a standardised framework.

6.1 Primary Price Sources

For each supported asset, a BSKT may designate one or more of the following as primary price sources:

- **On-chain AMM price feeds**: spot or time-weighted average prices (TWAPs) derived from deep liquidity pools on major decentralised exchanges (e.g. Uniswap V3 pools on Ethereum).
- **External oracle feeds**: decentralised oracle networks that publish asset prices on-chain (e.g. Chainlink price feeds, Pyth Network or similar providers).
- **Composite feeds**: combinations of multiple sources (for example, the median of several AMM pools or a blend of AMM and oracle prices).

The selected price source and any relevant configuration parameters (for example, TWAP interval, deviation thresholds) are recorded in governance-controlled contract configuration. Interface metadata may display these settings for convenience, but the authoritative source is the on-chain contract state. Oracle configuration may be adjusted through BSKT governance or Alvara DAO governance, as applicable.

Current Implementation

The Protocol currently uses the CoinGecko API as its primary price source for NAV calculations, rebalancing and performance metrics. A migration to 1inch price feeds is planned to reduce reliance on a single centralised data provider and improve on-chain verifiability. The current oracle configuration is as follows:

Parameter	Current Value
Primary price source	CoinGecko API

Parameter	Current Value
Planned migration	1inch price feeds
Price update trigger	On each user interaction (deposit, withdraw, rebalance)
Staleness limit	Prices older than 60 seconds are rejected; a fresh fetch is triggered
Deviation threshold	Not currently enforced at the protocol level; planned with 1inch migration
Fallback order	If CoinGecko is unavailable, the transaction reverts. Users retry when pricing is restored
Protocol-wide default changes	Admin multisig (transitioning to Alvara DAO)
Basket-specific overrides	Basket manager or BSKT DAO

The current reliance on a single centralised price API (CoinGecko) is a known limitation. The planned migration to 1inch will introduce on-chain price verification, configurable deviation thresholds and multi-source fallback logic. Until that migration is complete, the Protocol's pricing is dependent on the availability and accuracy of the CoinGecko API.

Readers should verify current oracle parameters against the deployed smart contracts and governance records, as configurations may change through governance.

6.2 Staleness, Deviation and Fallback Logic

To reduce the impact of stale or manipulated prices, the Protocol is designed to support staleness checks, deviation checks and fallback logic within its pricing framework.

In the current Ethereum mainnet implementation as of March 2026:

- **Staleness checks** are enforced. Prices older than 60 seconds are rejected and a fresh fetch is triggered.
- **Deviation checks** are not currently enforced at the protocol level. These are planned to be introduced with the migration to 1inch price feeds.
- **Fallback logic** is currently limited. If the CoinGecko price source is unavailable, the relevant transaction reverts and the user must retry once pricing is restored.

Future versions of the Protocol are expected to support configurable deviation thresholds and multi-source fallback logic, including secondary on-chain price feeds where appropriate.

Where safeguard conditions are triggered, certain BSKT operations (for example, deposits, withdrawals or rebalancing trades) may be rejected, paused or limited until reliable pricing resumes.

6.3 Oracle Governance and Changes

Oracle configurations are subject to governance:

- For **Protocol-wide defaults** (for example, recommended feeds for commonly used assets), changes are governed by the Alvara DAO.
- For **BSKT-specific overrides** (for example, specialised feeds for a particular strategy), changes may be governed by the relevant BSKT DAO or manager, within the bounds permitted by the Protocol.

Any change to oracle configuration can materially affect NAV, risk and behaviour of BSKTs. Proposals to modify oracle sources or parameters should include a clear rationale and, where appropriate, independent risk review.

6.4 Oracle and Data Risks

Oracle and data risks include, but are not limited to:

- manipulation of on-chain liquidity pools used as price references;
- failure, delay or misconfiguration of external oracle networks;
- incorrect asset mappings or decimals; and
- stale or missing data during network congestion or outages.

These risks can result in inaccurate NAV calculations, mispriced deposits or withdrawals, and inappropriate rebalancing actions. Users should be aware that the Protocol cannot fully eliminate oracle risk.

7. LEADERBOARD AND PERFORMANCE METRICS

The Protocol maintains an on-chain leaderboard that ranks BSKTs based on transparent, objective performance metrics. The Leaderboard is designed to:

- highlight managers and strategies with strong, risk-adjusted track records;
- help users discover baskets that match their investment preferences and risk tolerance; and
- promote meritocratic allocation of attention and capital within the ecosystem.

7.1 Metrics

Key metrics displayed include:

Metric Category	Examples
Returns	1-week, 1-month, 3-month, 6-month, 1-year cumulative and annualised returns
Risk	Volatility (standard deviation of returns), maximum drawdown, Sharpe ratio
Scale	Assets under management (AUM), total LP token supply, contributor count
Cost	Management fee rate, TER, gas costs incurred
Composition	Asset concentration (Herfindahl index), stablecoin exposure percentage, ALVA weighting
Manager	Verification status, basket age, rebalancing frequency

7.2 Data Sources and Methodology

Leaderboard data is derived from on-chain activity (NAV calculations, transaction history) and may be supplemented with off-chain analytics where clearly indicated. All performance calculations use NAV-based returns, accounting for fees and liabilities.

Rankings do not constitute investment advice or any endorsement by Alvara Protocol Inc. or the Alvara DAO. Once the manager verification system launches (Q2 2026), verified managers will receive enhanced visibility on the Leaderboard.
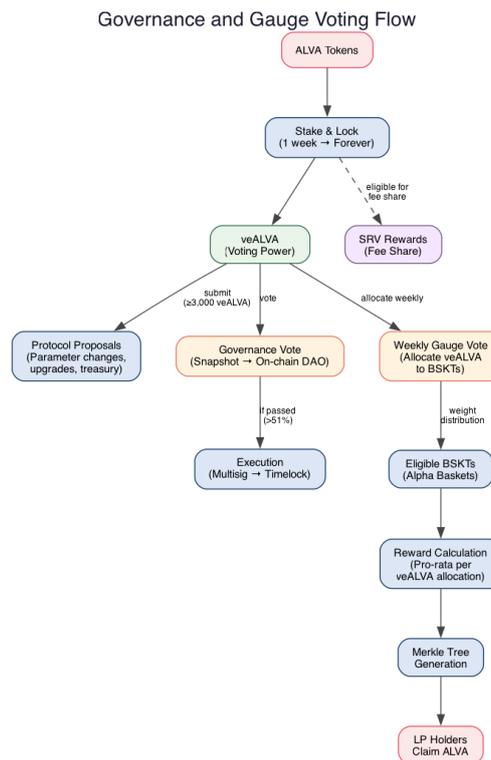
Figure 4: Governance and Gauge Voting Flow

8. STAKING PLATFORM AND veALVA MECHANICS

8.1 Staking Rewards Vault (SRV)

The Staking Platform allows ALVA holders to lock their tokens for specified durations to obtain veALVA and become eligible to receive a share of the SRV. The SRV:

- is funded by a percentage of Protocol fees (currently 10% of BSKT Lab fees);
- distributes rewards periodically (e.g. weekly) based on each user's share of ALVA staked in a given lock-up tier;
- allows unclaimed rewards to accrue over time, subject to smart contract design.

Compounding of rewards (adding rewards to the existing stake) is supported, with the effect of increasing the user's share of the pool but not necessarily extending the lock-up period or resetting veALVA decay, unless specified by the smart contract.

8.2 Staking Rewards Calculation

Within each lock-up pool, rewards from the SRV are distributed pro rata to participants according to the amount of ALVA they have locked in that pool.

If:

- **TR_pool** is the total ALVA rewards allocated to a specific lock-up pool for a given period (e.g. one week);

- **ALVA_staked_pool** is the total amount of ALVA locked in that pool; and
- **ALVA_staked_user** is the amount of ALVA locked by a particular user in that pool,

then that user's reward for the period is:

```
CR_user = TR_pool × ( ALVA_staked_user ÷ ALVA_staked_pool )
```

Rewards do not retroactively change a user's veALVA balance for past voting periods. Users may choose to claim rewards, restake them or withdraw them, each action being subject to gas costs and the applicable smart-contract rules.

8.3 Locking Periods and veALVA Allocation

Locking periods determine both the veALVA received by a user and the percentage of the total SRV allocated to that lock-up tier. Longer locks generally produce more veALVA and a higher share of rewards.

Lock Duration	ALVA	veALVA	Pool's % of Rewards
1 week	100	1	0%
1 month	100	5	0%
3 months	100	20	0.5%
6 months	100	50	1.25%
12 months	100	100	2.75%
18 months	100	200	4.50%
24 months	100	400	8.50%
36 months	100	800	12.50%
48 months	100	1,000	20%
Forever (Burn)	100	200	50%

The values in this table are the current live parameters on Ethereum mainnet as of March 2026. They may be adjusted via Alvara DAO governance. Users should verify current parameters via the smart contract interfaces or the Alvara dApp before locking ALVA.

See Section 5.2 for the rationale and current parameters of the Forever (Burn) tier.

Note: the 1-week and 1-month lock tiers receive 0% of SRV rewards. These tiers exist to provide short-term veALVA for governance participation but do not confer fee-sharing rights. The SRV is funded by 10% of BSKT Lab fees (create, deposit and withdraw). Additional fee sources may be added to the SRV via governance in the future.

8.4 veALVA Decay and Governance Impact

Except for "forever" locks, veALVA balances decay linearly over the chosen lock-up period. Decay:

- affects the user's voting power in subsequent proposals and gauge allocations;
- does not retroactively change votes already cast on proposals whose voting period has closed;
- may affect the user's ability to meet proposal thresholds (e.g. minimum veALVA required to submit a proposal).

Example: If a user locks 100 ALVA for 1 year and receives 100 veALVA, then at the end of day 1, their balance automatically reduces to (100 / 365.25 × 364.25) veALVA. At the end of day 2, their balance reduces to (100 / 365.25 × 363.25) veALVA. This continues until lock expiry, when their veALVA balance

reaches 0.

9. BSKTX AND LIQUIDITY PROVISION (In Development)

9.1 Overview

BSKTX is a planned decentralized trading venue where users will be able to:

- trade BSKT LP tokens against other assets (e.g. ETH, stablecoins);
- provide liquidity to BSKT-related pools and earn fee income;
- engage in arbitrage between BSKT NAV and market prices, subject to risk.

9.2 AMM Curve

BSKTX will use constant-product automated market maker logic ($x * y = k$, similar to Uniswap V2), which exposes LPs to impermanent loss relative to simply holding the underlying assets. Governance may approve additional curve types for specific baskets in the future.

9.3 Liquidity Provision and Fees

Liquidity providers will:

- deposit BSKT LP tokens (and, where applicable, a paired asset) into a BSKTX pool;
- receive AX LP tokens representing their share of the pool;
- earn a proportionate share of trading fees. The planned fee allocation for BSKTX is 0.30% per transaction, split equally between AX LP holders (0.10%), the Foundation treasury (0.10%) and the manager of the BSKT whose LP token is being traded (0.10%). See the fee table in Section 15.

Liquidity provision is inherently risky and exposes LPs to impermanent loss, price volatility and potential smart contract or Protocol-level failures. No assurance is provided regarding trading volumes, fee levels or the persistence of any given pool.

10. BSKT MARKETPLACE (In Development)

Each BSKT deployed through the Protocol has associated management rights, which include the ability to propose and execute changes to that BSKT's parameters (for example, asset weights, rebalancing rules, management fees and yield-strategy permissions), subject to any BSKT-specific DAO.

The BSKT Marketplace will be an on-chain venue where these management rights can be transferred between participants. Once live, this will enable:

- the original creator of a BSKT to offer their management rights for sale;
- prospective managers to acquire control over an existing BSKT with an established track record and fee stream; and
- a transparent secondary market for management rights, where prices are set by supply and demand.

Marketplace listings will typically display:

- historic performance metrics (e.g. NAV history, drawdowns, volatility);
- fee parameters (management-fee rate and performance-fee structure if applicable);

- key risk and strategy information;
- manager verification status; and
- any material configuration constraints (e.g. yield-strategy limitations).

Transfers of management rights will be executed via smart contracts and recorded on-chain. The Alvara Protocol does not guarantee the success, performance or continued operation of any BSKT whose management rights have been transferred.

11. GOVERNANCE AND DAOs

11.1 Alvara DAO

The Alvara Protocol is governed by the Alvara DAO, a decentralized governance system in which veALVA holders can:

- submit proposals (subject to minimum thresholds);
- vote on proposals, including parameter changes, upgrades, fee allocations and treasury usage;
- participate in gauge voting to allocate ALVA rewards among eligible BSKTs.

Governance Execution Model

	Current State	Future State
Voting	Snapshot (off-chain, gasless)	On-chain DAO contracts
Execution	Admin multisig (3-of-4) executes approved outcomes	Timelock contracts execute automatically
Emergency	Admin multisig acts narrowly, governance ratifies	Same, with DAO-controlled scope reduction
Quorum	20% of circulating veALVA	20% (adjustable via governance)
Pass rate	51% of votes cast	51% (adjustable via governance)

Current Implementation (Snapshot-Based)

Governance currently operates via Snapshot, an off-chain, gasless voting platform. Proposals are submitted weekly (following a structured epoch cadence), and voting is weighted by veALVA holdings at a snapshot block. Results are recorded off-chain on Snapshot and stored in the Protocol's off-chain database, which feeds the rewards calculation pipeline (see Section 12.3).

This approach eliminates gas costs for voters and provides an accessible governance experience during the Protocol's growth phase. However, off-chain voting relies on honest execution of results by the admin multisig, which introduces a trust assumption that the planned on-chain DAO will remove.

Planned: On-Chain DAO

The Protocol is actively developing a fully on-chain DAO that will execute governance decisions directly via smart contracts and timelocks, removing the need for trusted intermediaries to implement vote outcomes. See Section 16 for timeline.

Key Parameters

- **Proposal Threshold**: 3,000 veALVA minimum required to submit a proposal. This threshold may be adjusted via governance.

- **Quorum**: 20% of circulating veALVA must participate for a vote to be valid. This threshold may be adjusted via governance as the participant base evolves.

- **Pass Rate**: default pass rate is 51% of votes cast, subject to governance.

Decisions approved by the DAO are executed via smart contracts wherever possible. Where off-chain implementation is necessary (e.g. legal structuring, off-chain service providers), Alvara endeavours to act in good faith to implement the will of the DAO, subject to applicable law and contractual constraints.

11.2 BSKT DAOs

BSKT creators may optionally configure their own BSKT-specific DAOs to:

- decide on rebalancing, fee changes or yield-generation strategies;
- govern marketplace listing parameters;
- manage treasury or reserve assets associated with the basket.

Governance participants are typically BSKT LP token holders, with voting power determined by LP holdings or other parameters defined by the BSKT creator. BSKT DAOs are independent from the Alvara DAO, although their actions may still be constrained by overarching Protocol parameters and applicable law.

11.3 Multisig and Emergency Controls

11.3.1 Admin Multisig

Key administrative functions are controlled by a single 3-of-4 multisig wallet. This is the same multisig used for both routine administration and emergency actions (there is no separate emergency multisig). The multisig has the following privileged capabilities:

- Upgrading core Protocol contracts via proxy patterns
- Adjusting Protocol-level parameters (fee rates, whitelist changes, reward allocations)
- Submitting Merkle roots for gauge-weight reward claims
- Pausing deposits or withdrawals on specific contracts
- Executing emergency actions (see below)

These powers will transition to the on-chain DAO as it is deployed (see Section 16). Until then, the multisig acts as the execution layer for governance decisions approved via Snapshot. Except where emergency authority is expressly described above, the admin multisig is intended to execute governance-approved actions rather than exercise independent discretionary control.

11.3.2 Emergency Actions

The Protocol includes emergency mechanisms designed to respond to severe market or technical events (for example, oracle failures or critical vulnerabilities). These include:

- Manager's ability to execute Emergency Stables on their own BSKT (see Section 4.2.3);
- the admin multisig's ability to pause deposits or certain functions in specific contracts; and
- coordinating migrations to patched or upgraded contracts.

11.3.3 Duration and Review

Emergency and admin powers are not intended to be permanent. While no fixed sunset is imposed at launch, the expectation is that:

• the DAO will progressively assume direct control over more critical functions; and

• the scope and composition of the multisig will be periodically reviewed and may be reduced or revoked by governance as decentralisation milestones are met.

12. ALVARA CORE BEHAVIOUR AND REWARDS

12.1 ALVA Rewards for BSKTs

A substantial portion of ALVA supply (44%, or 88,000,000 ALVA) is reserved for incentivizing participation in BSKTs deployed via the Protocol. Rewards:

    • are distributed over a long-term schedule (31 years), with decreasing annual emissions;

    • are allocated among eligible ("Alpha") BSKTs based on weekly gauge voting by veALVA holders;

    • may be claimed by BSKT LP holders via the on-chain claim portal.

No guarantee is provided as to the level of rewards, their duration, or whether any particular BSKT will remain eligible. All reward parameters are subject to governance and may be revised or discontinued.

12.2 Gauge-Reward Formula

If **R_total** is the total ALVA rewards for a given epoch and **v_j** is the total veALVA votes allocated to BSKT j, then its reward share is:

```
R_j = R_total × ( v_j / Σ_k v_k )
```

12.3 Reward Claim Mechanism

ALVA rewards are distributed via a Merkle-tree-based claim system:

    1. At the end of each weekly epoch, the gauge voting results determine the ALVA allocation per BSKT.

    2. Within each BSKT, rewards are distributed pro rata to LP holders based on their share of the BSKT's LP token supply at the snapshot block.

    3. A Merkle root is computed from the reward allocations and submitted to the GaugeWeightClaims smart contract on Ethereum.

    4. Eligible users claim their rewards by submitting a Merkle proof to the contract, which verifies eligibility and transfers the ALVA tokens.

    5. Batch claims across multiple epochs are supported in a single transaction.

This approach minimises gas costs (only claimants pay gas, and only when they choose to claim) while maintaining full on-chain verifiability of reward entitlements.

12.4 ALVA Rewards Emissions Table

Year	Weekly Rewards (ALVA)	Yearly Rewards (ALVA)	Aggregate Rewards (ALVA)	Cumulative (% of 88M)	Cumulative (% of 200M supply)
1	119,020	6,189,049	6,189,049	7.03%	3.09%
2	111,879	5,817,706	12,006,755	13.64%	6.00%
3	105,166	5,468,644	17,475,399	19.86%	8.74%
4	98,856	5,140,525	22,615,924	25.70%	11.31%

Year	Weekly Rewards (ALVA)	Yearly Rewards (ALVA)	Aggregate Rewards (ALVA)	Cumulative (% of 88M)	Cumulative (% of 200M supply)
5	92,925	4,832,094	27,448,018	31.19%	13.72%
6	87,349	4,542,168	31,990,186	36.35%	16.00%
7	82,108	4,269,638	36,259,824	41.20%	18.13%
8	77,182	4,013,460	40,273,284	45.77%	20.14%
9	72,551	3,772,652	44,045,936	50.05%	22.02%
10	68,198	3,546,293	47,592,229	54.08%	23.80%
11	64,106	3,333,515	50,925,744	57.87%	25.46%
12	60,260	3,133,505	54,059,249	61.43%	27.03%
13	56,644	2,945,494	57,004,743	64.78%	28.50%
14	53,245	2,768,765	59,773,508	67.92%	29.89%
15	50,051	2,602,639	62,376,147	70.88%	31.19%
16	47,048	2,446,480	64,822,627	73.66%	32.41%
17	44,225	2,299,692	67,122,319	76.28%	33.56%
18	41,571	2,161,710	69,284,029	78.73%	34.64%
19	39,077	2,032,007	71,316,036	81.04%	35.66%
20	36,732	1,910,087	73,226,123	83.21%	36.61%
21	34,528	1,795,482	75,021,605	85.25%	37.51%
22	32,457	1,687,753	76,709,358	87.17%	38.35%
23	30,509	1,586,488	78,295,846	88.97%	39.15%
24	28,679	1,491,298	79,787,144	90.67%	39.89%
25	26,958	1,401,821	81,188,965	92.26%	40.59%
26	25,341	1,317,711	82,506,676	93.76%	41.25%
27	23,820	1,238,649	83,745,325	95.17%	41.87%
28	22,391	1,164,330	84,909,655	96.49%	42.45%
29	21,048	1,094,470	86,004,125	97.73%	43.00%
30	19,785	1,028,802	87,032,927	98.90%	43.52%
31	18,598	967,073	88,000,000	100.00%	44.00%

13. SECURITY AND AUDIT PROCESS

Alvara follows a multi-layered security process aligned with industry best practices for decentralized protocols.

13.1 Secure Development Lifecycle

All smart contracts and supporting code are developed in accordance with Alvara's internal engineering standards, including structured code review and segregation of duties between authors and reviewers. An

independent internal audit team conducts a first-line security review of each major release before any external assessment is commissioned.

13.2 Independent External Audits

The mainnet launch of the Alvara platform was audited by three independent third-party security firms:

Auditor	Report	Scope	Findings Status
Quill Audits	BSKT Lab + Factory Audit (Oct 2023)	BSKT Lab, Factory, Pair contracts	All critical/high remediated
Quill Audits	ALVA Token AVAX Audit (May 2024)	AlvaraAvax token contract	All critical/high remediated
Quill Audits	Smart Contract Audit (Apr 2025)	Core protocol smart contracts	All critical/high remediated
CertiK	Security Assessment (Jun 2025)	Core protocol contracts, economic risk analysis	All critical/high remediated
Adevar	Platform Security Audit (Aug 2025)	Full platform and dApp security	All critical/high remediated
Quill Audits	Staking Contract Audit (Dec 2025)	Staking and veALVA contracts	All critical/high remediated
Adevar	1inch Integration Audit (Jan 2026)	1inch price feed integration	All critical/high remediated
Quill Audits	Protocol Re-Audit (Feb 2026)	Updated core protocol contracts	All critical/high remediated

Full audit reports, including detailed findings, severity classifications and remediation status, are available in the Alvara GitHub organization (https://github.com/Alvara-Protocol). Additional audit coverage will be commissioned for new modules (BSKTX, BSKT Marketplace, on-chain DAO) prior to their mainnet deployment.

13.3 Penetration Testing and Attack Surface Hardening

In addition to smart contract audits, dedicated penetration testing was carried out against the platform to identify and mitigate non-contract attack vectors (e.g. infrastructure, API and integration layers). This is intended to reduce the broader attack surface beyond direct interactions with the Protocol's on-chain components.

13.4 Transparency of Findings

All finalized audit reports are publicly available in the Alvara GitHub organization at:

https://github.com/Alvara-Protocol

This ensures full transparency for users, integrators and partners, and allows independent verification of the security of the Protocol over time.

14. UPGRADEABILITY AND EMERGENCY CONTROLS

The Alvara Protocol balances the desire for long-term immutability with the need to address security issues, adapt to changing market conditions and comply with evolving regulations.

14.1 Contract Classes

Protocol contracts can be grouped as follows:

- **Core Protocol contracts**: contracts implementing essential functionality such as BSKT creation and management, ALVA staking and the SRV, BSKTX liquidity pools, and key governance logic.
- **Peripheral contracts**: ancillary modules such as adapters, helper contracts, indexing aids and user-interface support contracts.
- **Third-party contracts**: external protocols (e.g. lending markets, AMMs, bridges) that BSKTs or BSKTX may integrate with but are not controlled by Alvara governance.

The upgradeability and control model may differ between these classes.

14.2 Upgrade Mechanisms

Some core Protocol contracts are deployed using upgradeable proxy patterns or modular architectures (for example, separate logic and storage contracts). Where upgrades are possible:

- **Governance control**: upgrades are executed only following an approved governance proposal (Alvara DAO or, where applicable, a BSKT DAO). In the current Snapshot-based governance model, there is no on-chain timelock; the admin multisig executes approved upgrades directly. On-chain timelocks will be introduced with the planned on-chain DAO (see Section 16).
- **Multisig execution**: the technical act of upgrading contracts is carried out by a multi-signature wallet controlled by a set of authorised signers, acting in accordance with governance decisions.
- **Transparency**: upgrade transactions and new contract implementations are publicly visible on-chain, and upgraded code remains open-source and available for review.

The Protocol may move over time towards increased immutability of certain contracts as the system matures and the community's risk tolerance for change decreases.

14.3 Emergency Pause and Circuit Breakers

To mitigate the impact of critical vulnerabilities or severe market dislocations, certain Protocol functions may be subject to emergency controls, such as:

- pausing deposits and withdrawals for specific BSKTs;
- pausing ALVA staking or reward claims;
- pausing creation of new BSKTs or BSKTX pools; or
- temporarily disabling integrations with affected third-party protocols.

Emergency controls may be triggered by a governance-approved emergency proposal, or by the admin multisig (3-of-4 threshold, as described in Section 11.3.1).

Emergency powers are intended to be narrow in scope and temporary. Where an emergency control is activated without a prior governance vote, a governance proposal is submitted promptly to ratify or amend the action.

14.4 Limitations and Governance Over Time

While upgradeability and emergency controls can reduce certain risks, they also introduce:

- governance risk (e.g. malicious or negligent upgrades); and

- trust in the holders of executive authority (e.g. multi-signature signers).

The long-term intention of the Alvara community is to reduce reliance on privileged roles where feasible, increase the use of on-chain governance and timelocks for significant changes, and provide clear public documentation of any remaining privileged capabilities.

Users should factor governance and upgradeability risk into their assessment of the Protocol and may choose to avoid interacting with contracts whose control models they do not accept. Current control configurations, proxy implementations and privileged roles can be verified by inspecting the deployed contracts on-chain and in the Alvara GitHub repositories.
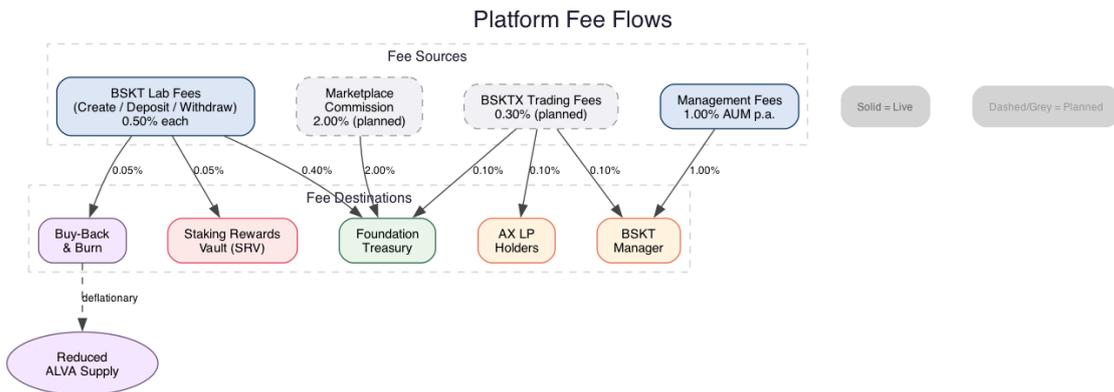
Figure 5: Platform Fee Flows

15. ALVARA FOUNDATION AND BUSINESS MODEL

15.1 Business Model

Alvara's business model is primarily fee-based and designed to support the long-term sustainability of the ecosystem. Revenue sources include:

- deployment fees for new BSKTs;
- deposit and withdrawal fees in the BSKT Lab;
- trading fees on BSKTX;
- marketplace commissions on BSKT management-rights transfers;
- fees for premium services (e.g. analytics, integration support);
- in-platform advertising fees.

These fees are shared between the Foundation treasury, BSKT managers (where applicable), ALVA stakers via the SRV, buy-back-and-burn operations, and liquidity providers.

Fee levels and allocations are subject to change via governance and may also be impacted by regulatory requirements or market conditions.

15.2 Table of Platform Fees

Platform	Action	Total Fee	Foundation	Manager	Staking Rewards Vault	AX LP Holders	Buyback & Burn
BSKT Lab	Create (new basket)	0.50%	0.40%	—	0.05%	—	0.05%
BSKT Lab	Deposit (add to basket)	0.50%	0.40%	—	0.05%	—	0.05%
BSKT Lab	Withdraw (redeem LPs)	0.50%	0.40%	—	0.05%	—	0.05%

Platform	Action	Total Fee	Foundation	Manager	Staking Rewards Vault	AX LP Holders	Buyback & Burn
BSKT Lab	Management (annual)	1.00%	—	1.00%	—	—	—
BSKTX (planned)	Transaction	0.30%	0.10%	0.10%	—	0.10%	—
Marketplace (planned)	Commission	2.00%	2.00%	—	—	—	—

16. DEVELOPMENT ROADMAP

The following roadmap reflects the Protocol's current development priorities. Timelines are indicative and subject to change based on technical progress, market conditions and governance decisions.

Completed (Live on Mainnet)

- ERC-7621 Basket Token Standard: designed, implemented and deployed
- BSKT Lab: create, deposit, withdraw, manager-initiated rebalancing
- Emergency Stables mechanism
- ALVA token launch on Ethereum
- ALVA on Avalanche C-Chain and Base (bridging and DEX liquidity)
- Staking Platform and veALVA
- Gauge-weight voting via Snapshot (8 epochs completed)
- Merkle-tree-based ALVA reward claims
- Leaderboard
- Security audits by Quill Audits, CertiK and Adevar

Q2 2026: In Development

Manager Verification System A reputation and attestation layer for BSKT managers, combining Twitter/X account verification and Gitcoin Passport scoring. Verified managers receive enhanced visibility on the Leaderboard and eligibility for additional Protocol incentives.

On-Chain DAO Migration from Snapshot-based governance to a fully on-chain DAO with smart contract execution and timelocks, removing the need for trusted intermediaries to implement vote outcomes. The on-chain DAO will handle proposal submission, voting, execution and treasury management directly via smart contracts.

Automatic Rebalancing Periodic and threshold-based rebalancing modes, enabling BSKTs to automatically maintain target allocations without manual manager intervention.

BSKTX A decentralized trading venue and liquidity layer for BSKT LP tokens, enabling secondary-market price discovery and trading of basket positions.

BSKT Marketplace An on-chain marketplace for the transfer of BSKT management rights and associated fee streams.

Configurable ALVA Allocation Making the mandatory 5% ALVA allocation configurable per network and per basket, with alternative fee structures for baskets that opt out.

H2 2026: Planned

Solana Network Expansion Deployment of the Alvara Protocol on Solana, bringing BSKT creation and management to the Solana ecosystem. This includes adapting the basket architecture to Solana's account model and integrating with Solana-native DEXs and price feeds.

Multichain Baskets Enabling BSKTs to hold assets across multiple blockchain networks simultaneously, with cross-chain rebalancing and unified NAV accounting. This represents a significant architectural extension and will require integration with cross-chain messaging and bridging infrastructure.

BNB Chain Expansion Deployment of BSKT Lab and supporting infrastructure on BNB Chain.

Advanced Rebalancing Partial execution with progressive rebalancing, per-trade caps on pool liquidity consumption, and alternative routing via aggregators to minimise cost and slippage.

Future

- Additional network deployments based on ecosystem demand and governance decisions
- Advanced yield strategies with governance-controlled risk parameters
- Institutional-grade reporting and compliance tooling
- API access for third-party integrations and institutional participants

17. SYSTEM ASSUMPTIONS AND THREAT MODEL

The Alvara Protocol is designed and implemented under a set of explicit assumptions about the behaviour of the underlying blockchains, external infrastructure and participants. These assumptions are not guarantees and may not always hold in practice. They are stated here to clarify the intended security model and to assist users, integrators and auditors in assessing Protocol risk.

17.1 Base-Layer and Network Assumptions

The Protocol is deployed on public, permissionless blockchains (initially Ethereum and selected EVM-compatible networks). It assumes that:

- **Consensus safety and liveness**: the underlying chain eventually finalises transactions and does not experience long-lived consensus failures or rollbacks beyond the normal reorganisation depth used by the Protocol's indexers.
- **Censorship resistance within tolerance**: while individual transactions may be delayed or censored by specific validators or block producers, a sufficient fraction of block producers remain willing to include valid Protocol transactions within a reasonable time frame.
- **Network availability**: the chain's RPC and peer-to-peer infrastructure is generally available, subject to intermittent downtime, congestion and fee spikes.

The Protocol does not attempt to defend against tail-risk events at the base-layer (for example, permanent forks, majority attacks, or catastrophic consensus failures). Such events may adversely impact BSKTs, ALVA and all other Protocol components.

17.2 Oracle and Market Assumptions

Alvara assumes that, under normal market conditions:

- The designated price feeds (on-chain AMM pools and/or external price oracles) provide reasonably accurate prices for supported assets over the time horizons used for NAV calculations, rebalancing and risk management.
- Liquidity for supported assets is sufficient that Protocol-driven trades (for example, rebalancing or large deposits/withdrawals) can be executed within configured slippage limits in normal market conditions.

These assumptions may break down during extreme volatility, liquidity crises, oracle outages or coordinated market manipulation. In such cases, the Protocol's safeguards (for example, slippage limits, oracle-staleness checks or pause mechanisms) may halt or degrade certain functions until conditions normalise.

17.3 Governance and Social Assumptions

Alvara DAO and any BSKT DAOs are decentralised governance mechanisms based on veALVA or BSKT LP holdings. The Protocol implicitly assumes that:

- No single participant or colluding group with a supermajority of voting power systematically acts against the long-term interests of the Protocol and its users.
- Governance participants generally review proposals in good faith and avoid approving changes that introduce obvious, exploitable vulnerabilities or transfer value in an abusive manner.

These assumptions may fail if a small group accumulates a controlling fraction of veALVA or BSKT LPs, or governance processes are captured through bribery, social engineering or other forms of coercion. Governance capture could result in adverse parameter changes, upgrades or treasury allocations. Users should evaluate governance risk when deciding whether to interact with the Protocol.

17.4 Adversarial Threats

The Protocol is designed with the expectation of active adversaries attempting to:

- exploit smart-contract vulnerabilities in core or third-party contracts;
- manipulate on-chain prices to influence NAV and rebalancing decisions;
- game leaderboard rankings or fee structures for personal gain; or
- attack cross-chain bridges or messaging layers used by ALVA or BSKTs.

While the Protocol employs audits, monitoring and conservative defaults to mitigate such threats, no system can be guaranteed to be secure. In particular, cross-chain bridges introduce additional trust assumptions and attack surfaces.

17.5 Out-of-Scope Risks

The Protocol does not protect against:

- compromise of users' private keys, devices or wallets;
- phishing, social engineering or other off-chain fraud;
- misrepresentation or default by issuers of real-world asset tokens or other external products held in a BSKT; or
- tax, accounting, regulatory or legal consequences for individual users.

Users are responsible for their own operational security and for understanding the risks associated with any underlying assets or third-party protocols they choose to interact with through Alvara.

18. TEAM AND MANAGEMENT

The Alvara team combines deep experience across crypto-native entrepreneurship, traditional finance, smart contract engineering, product design and brand strategy.

Founding Team

Callum Mitchell-Clark: Co-Founder

Callum brings over a decade of experience founding and leading crypto startups. As co-architect of the Alvara Protocol and the ERC-7621 Basket Token Standard, he is responsible for Protocol strategy, ecosystem growth and institutional partnerships. His background spans the full lifecycle of crypto ventures, from early-stage product development through to exchange listings and community building.

Dominic Ryder: Co-Founder

Dominic is a CISI-qualified derivatives trader turned crypto entrepreneur with over 10 years of experience across crypto engineering, advisory and venture building. A co-inventor of the ERC-7621 Basket Token Standard, he leads the technical vision, smart contract architecture and Protocol engineering for Alvara. His background in derivatives trading and regulated finance, combined with hands-on blockchain development experience across multiple ventures including VEMP, informs the Protocol's approach to rebalancing mechanics, slippage controls and institutional-grade risk management.

Deon Dreyer: Co-Founder

Deon is a seasoned investment leader with 25 years of experience building and growing investment modelling, analytics, SaaS and consulting businesses across some of the most recognised names in institutional finance, including Broadstone, Ortec Finance, Aon, PwC and Barclays. His domain expertise spans asset-liability modelling, investment strategy, climate modelling and product development for institutional asset owners and managers. Over the past five years, Deon has applied this institutional perspective to DeFi, advising on and building digital asset products. His deep understanding of portfolio construction, fund management and institutional capital allocation is central to the design of the BSKT framework, fee structures and the Protocol's positioning for institutional participants.

Leadership Team

Nikolaos (Nikos) Fotiadis: Chief Technology Officer

Nikos is an experienced blockchain and full-stack developer specialising in system design, architecture and scalability. He holds a B.Sc. in Computer Science from the University of Crete and has led Web3 engineering teams across multiple production-grade DeFi protocols.

Prior to Alvara, Nikos served as Lead Full-Stack and Blockchain Developer at WeatherXM, where he led the Web3 team developing and maintaining production Ethereum contracts, oversaw external audits and built infrastructure for tokenised data distribution and multi-chain reward systems. Previously, at Block3 Group, he designed the migration from monolith to microservices architecture for a brokerage platform handling millions in monthly volume. At Hotcross, he built multi-chain DeFi protocols including AMMs, yield farms, staking systems, launchpads and cross-chain bridges.

Nikos has been recognised at ETHGlobal hackathons, finishing as a top-10 finalist (out of 400 teams) at ETHGlobal Istanbul 2023 and winning two sponsor prizes at ETHGlobal Amsterdam 2022. His core expertise spans Solidity, Hardhat, EVM chains, TypeScript, Node.js, React, NestJS, AWS, Kubernetes and Terraform.

Michael Ryder: Head of Product

Michael is a former audiovisual technologist who spent years designing interactive solutions for major clients before transitioning to Web3. With over five years of experience in DeFi product design, he leads the user experience, interface design and product roadmap for the Alvara platform, ensuring that complex on-chain functionality is accessible to both retail and institutional users.

Natalie Rodic Marsan: Chief Marketing Officer

Natalie is a pioneering brand architect and strategic marketer with 16 years of experience spanning Fortune 100 companies, global agencies, fintech and blockchain ventures. A graduate of the University of Texas at Austin, she has built and scaled brand, marketing and communications functions across both traditional corporate environments and high-growth Web3 projects. At Alvara, she leads brand strategy, community growth and institutional communications, bringing the rigour of Fortune 100 marketing to the pace and creativity of the crypto ecosystem.

Management Body

The management body of Alvara Protocol Inc. consists of the Co-Founders listed above. Contact and registered address details are provided in Section 19.

19. INFORMATION ABOUT THE OFFEROR

Name: Alvara Protocol Inc. **Legal form:** Corporation (Sociedad Anónima) **Registered address / Head Office:** Advanced Tower Building, First Floor, Ricardo Arias Street, Panama City, Republic of Panama

Date of incorporation: 24 February 2023 **Legal Entity Identifier (LEI):** N/A **National Registration Number (Panama):** 155733836 **Contact:** admin@alvara.xyz **Website:** https://alvara.xyz/ **Parent Company:** None

Management Body:

- Callum Mitchell-Clark, Co-Founder, 19th Floor, 1 Westfield Avenue, London, United Kingdom, E20 1HZ
- Dominic Ryder, Co-Founder, 19th Floor, 1 Westfield Avenue, London, United Kingdom, E20 1HZ

Business Activity:

Alvara Protocol Inc. develops and operates the Alvara Protocol, a decentralized protocol enabling the creation and management of tokenized baskets ("BSKTs") using the ERC-7621 standard on the Ethereum blockchain and other EVM-compatible networks.

Financial Condition:

Alvara Protocol Inc. is an early-stage entity with limited operating history. As at the date of this White Paper, funding has been secured primarily through seed and private token allocation rounds. Proceeds have been and will be applied to Protocol development, ecosystem growth, legal and compliance work and general operating expenses. Potential token holders should not construe this White Paper as containing, or be relying on it for, audited financial statements or financial projections.

20. LEGAL DISCLAIMER AND REGULATORY DISCLOSURES

Management Body Statement

The members of the management body of Alvara Protocol Inc. (the "Company", "Alvara", or the "Offeror") hereby confirm that this White Paper has been prepared in accordance with Title II of MiCA and that, to the best of their knowledge, the information presented in this White Paper is fair, clear and not misleading and does not omit any material information likely to affect its import.

This statement is given without prejudice to any future changes in applicable law, regulatory interpretation or supervisory practice, and does not constitute a guarantee as to the economic performance of ALVA or the Alvara Protocol.

Mandatory Risk Warnings (MiCA Title II)

Prospective token holders are specifically informed that:

1. This summary and the front sections of this White Paper should be read as an introduction only.

2. Any decision to purchase ALVA should be based on consideration of this White Paper as a whole.

3. This offer does not constitute an offer or solicitation to purchase financial instruments and does not fall within the scope of Regulation (EU) 2017/1129.

4. This White Paper does not constitute a prospectus or other offer document under Union or national law.

Prospective token holders are further informed that:

1. The Token may lose its value in part or in full.

2. The Token may not always be transferable.

3. The Token may not be liquid.

4. The Token may not be exchangeable against any promised goods or services, particularly in the event of failure or discontinuation of the project.

5. The Token is not covered by investor compensation schemes under Directive 97/9/EC.

6. The Token is not covered by deposit guarantee schemes under Directive 2014/49/EU.

20.1 Basis of Preparation under MiCA

This White Paper has been prepared on the basis of, and is intended to comply with, Title II of Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets ("MiCA"), as well as the related implementing technical standards, to the extent applicable to crypto-assets other than asset-referenced tokens and e-money tokens. It does not constitute legal, financial, tax or other professional advice and should not be relied upon as such.

Any decision to acquire the ALVA token ("ALVA", the "Token") should be based on a careful review of this White Paper as a whole, together with independent legal, tax, financial and other advice as appropriate. Acquisition of ALVA involves a high degree of risk. Prospective token holders may lose the entirety of the amount spent in acquiring ALVA.

20.2 Regulatory Status and Token Classification

Alvara intends to structure ALVA as a "utility token" for the purposes of MiCA, i.e. as a type of crypto-asset that is intended to provide digital access to a good or service, supplied by the issuer of that token, and that is only accepted by the issuer of that token (Article 3(1)(15) MiCA). ALVA is not intended to be:

• an asset-referenced token (ART);
• an e-money token (EMT); or

> • a financial instrument, deposit or other category excluded from MiCA under Article 2(4).

However, the ultimate classification of ALVA, and the permissibility of its offer or admission to trading in any jurisdiction, is a matter for the relevant national competent authorities and may be subject to change over time. This White Paper does not constitute, and should not be construed as, a binding determination of the regulatory status of ALVA in any jurisdiction.

20.3 No Financial, Legal or Tax Advice

This White Paper is provided for informational purposes only. It does not constitute:

> • investment advice or a recommendation to acquire or dispose of any crypto-asset;
>
> • legal, tax, accounting or regulatory advice;
>
> • an offer or solicitation to buy or sell financial instruments or securities.

Prospective token holders should consult their own legal, tax, financial and other professional advisers regarding the suitability of any crypto-asset exposure, including ALVA or BSKT LP tokens, given their objectives, experience, financial situation and risk tolerance.

20.4 No Guarantee of Value or Performance

Neither Alvara Protocol Inc. nor any of its affiliates, contributors or service providers makes any representation, warranty or undertaking regarding:

> • the future value, liquidity or volatility of ALVA or any BSKT or BSKT LP token;
>
> • the continued operation, security or error-free performance of the Protocol;
>
> • the availability or quality of any associated services or integrations.

Statements in this White Paper about future events or performance are forward-looking in nature and subject to a high degree of uncertainty. Actual outcomes may differ materially.

20.5 Regulatory Compliance Under MiCA and Other Regimes

Alvara intends to comply with applicable provisions of MiCA for offers to the public of crypto-assets in the European Union that are not asset-referenced tokens or e-money tokens. However:

> • regulatory regimes in other jurisdictions (including outside the EU) may impose additional or conflicting requirements;
>
> • supervisory interpretations and guidance under MiCA and other frameworks may evolve;
>
> • the classification and treatment of ALVA and BSKT tokens may vary between jurisdictions.

Alvara does not guarantee that holding or transacting in ALVA or BSKT tokens is lawful in any particular jurisdiction. Each prospective token holder is responsible for ensuring their own compliance with applicable laws, including securities, commodities, AML/CFT, sanctions and tax rules.

20.6 Taxation

Tax consequences of acquiring, holding, disposing of or using ALVA or BSKT tokens are highly dependent on the individual circumstances of each holder and on the laws of the relevant jurisdiction, which may change over time. Potential token holders should seek independent tax advice. Alvara does not undertake to provide ongoing tax guidance or reporting on behalf of token holders.

20.7 Jurisdictional Limitations

The distribution of this White Paper and the offering, sale or delivery of ALVA may be restricted by law in certain jurisdictions. Alvara does not intend to make, and does not make, any offer or solicitation where such offer or solicitation would be unlawful. Persons in possession of this White Paper should inform themselves about and observe any such restrictions.

20.8 No Investment Advice; High Risk

This White Paper and any related publications by Alvara do not constitute advice or a recommendation regarding any investment or other transaction. Acquiring, holding or transferring ALVA involves significant risks, including the risk of total loss. Prospective token holders should carefully review the Risk Disclosures (Section 21) and consult with independent advisors before making any decision to acquire ALVA.

20.9 Front-End vs Protocol and Licensing

20.9.1 Protocol vs User Interfaces

The Alvara Protocol consists of smart contracts deployed on public blockchains. These contracts are permissionless and may be accessed by any compatible wallet or interface.

Alvara Protocol Inc. and community contributors may provide one or more hosted user interfaces (front-ends) to facilitate interaction with the Protocol. These interfaces are separate from the Protocol itself and may:

- impose additional access controls or restrictions (for example, geo-blocking in certain jurisdictions);
- present information, analytics or educational content; and
- be subject to their own terms of use and privacy policies.

Users may also interact with the Protocol directly or via third-party interfaces. Alvara Protocol Inc. does not control, endorse or assume responsibility for any third-party interfaces.

20.9.2 Open-Source Licensing

The core Alvara Protocol smart contracts are available as open-source software in the Alvara GitHub organization (https://github.com/Alvara-Protocol). Licence terms are specified in each repository. Developers and integrators may use, modify and deploy the code in accordance with the applicable licence.

The "Alvara" name, logo and related marks may be protected by trademark or other intellectual property rights and may not be used without appropriate authorisation, except as permitted by applicable law.

21. RISK DISCLOSURES

Participation in the ALVA token offer and use of the Alvara Protocol involve significant risks, some of which are summarised below. This list is not exhaustive. Prospective token holders should perform their own risk assessment and due diligence.

21.1 Market Risks

- **Price Volatility**: The value of ALVA and BSKT LP tokens may be highly volatile. Prices may fluctuate significantly over short periods and may fall to zero.
- **Market Manipulation**: Crypto-asset markets may be susceptible to manipulation, including wash trading, spoofing, pump-and-dump schemes or concentrated holdings by large token holders.

• **Macroeconomic Conditions**: Economic downturns, changes in interest rates, inflation, geopolitical events or regulatory developments may adversely affect demand for crypto-assets and the Alvara ecosystem.

21.2 Regulatory and Legal Risks

• **Changes in Law**: New laws, regulations or guidance, including under MiCA, may impose stricter requirements on the Protocol or ALVA, such as registration, licensing, disclosure, capital or conduct obligations.

• **Divergent Jurisdictional Approaches**: Non-EU jurisdictions may classify ALVA or BSKT tokens differently (including as securities or derivatives), leading to restrictions or prohibitions on their offer, sale or trading.

• **Enforcement Actions**: Regulators may investigate, sanction or otherwise act against Alvara, related entities or ecosystem participants, which may adversely affect the Protocol's operation and the value or transferability of ALVA.

• **Tax and Reporting**: Holders may be subject to complex, evolving and sometimes extraterritorial tax rules. Failure to comply with tax or reporting obligations can result in penalties.

21.3 Technical and Cybersecurity Risks

• **Smart Contract Vulnerabilities**: Despite internal and external audits, smart contracts may contain undiscovered vulnerabilities, bugs or logic errors that can be exploited, leading to loss of funds or protocol disruption.

• **Blockchain-Level Risks**: Underlying blockchains (e.g. Ethereum) may experience congestion, outages, forks, consensus failures or other issues that impair the operation of the Protocol and the availability or transferability of tokens.

• **Bridge and Cross-Chain Risks**: Cross-chain bridges and interoperability protocols introduce additional complexity and attack surfaces. Exploits of these systems have historically resulted in significant asset losses.

• **Cyber Attacks**: The Protocol's interfaces, governance tooling, or user wallets may be targeted by hacking, phishing, malware or denial-of-service attacks.

• **User Error**: Loss of private keys, incorrect transactions, mis-interaction with smart contracts or other user mistakes can lead to irreversible loss of assets.

21.4 Operational and Project Risks

• **Development Uncertainty**: Delivery of Protocol features may be delayed, limited or cancelled due to technical, resource, regulatory or strategic constraints.

• **Key Personnel and Governance**: The Protocol's progress depends on the expertise and commitment of its contributors and the effectiveness of DAO governance. Loss of key contributors or governance failures may hinder development.

• **Third-Party Dependencies**: The Protocol relies on external infrastructure (e.g. oracles, explorers, RPC providers, DeFi integrations). Failures or adverse actions by these third parties may impact Protocol functioning.

• **Discontinuation Risk**: If the Protocol fails to achieve sustainable revenue, adoption or governance cohesion, development and maintenance may cease. In such a scenario, ALVA and BSKT tokens may lose most or all of their value and utility.

21.5 Liquidity Risks

• **Limited or Variable Liquidity**: ALVA or BSKT LP tokens may have limited liquidity on secondary markets, making it difficult or impossible to execute transactions at desired prices or volumes.

• **Delisting or Market Withdrawal**: Exchanges or liquidity providers may delist or cease supporting ALVA or BSKT tokens at any time for any reason.

• **NAV Premium/Discount**: BSKT LP tokens may trade at a premium or discount to their NAV due to supply-demand imbalances, market sentiment or arbitrage constraints.

21.6 Environmental and Sustainability Risks

• **Energy Consumption**: Although Ethereum's proof-of-stake consensus reduces energy usage compared to proof-of-work systems, the operation of the Protocol still entails an environmental footprint.

• **Regulatory Scrutiny**: Environmental or sustainability-related regulations may impose additional reporting or mitigation obligations on crypto-asset service providers, potentially increasing compliance costs.

Prospective token holders should only consider acquiring ALVA if they fully understand and are able to bear the risks described above, including the possibility of a total loss of the amount spent in acquiring ALVA.

22. Appendix: Current Mainnet Parameters and Control Surface

This appendix summarises the current operational state of the Alvara Protocol on Ethereum mainnet as of March 2026. Parameters listed here are live values and may change through governance. Readers should verify current state against the deployed contracts and the Alvara GitHub repositories (https://github.com/Alvara-Protocol).

A.1 Contract and Module Summary

Module	Live	Upgradeable	Upgrade Authority	Operational Authority	Pause Authority	Audit Coverage
ALVA Token (ERC-20)	Yes	No (immutable)	N/A	N/A	N/A	Quill, CertiK, Adevar
BSKT Lab (ERC-7621 Factory)	Yes	Yes (proxy)	Admin multisig (3-of-4)	Admin multisig (parameters)	Admin multisig	Quill, CertiK, Adevar
BSKT Contracts (per basket)	Yes	No (immutable)	N/A	Basket manager or relevant holder of management rights (including BSKT DAO / multisig, where applicable)	Same as operational authority (Emergency Stables, basket-level emergency actions)	Quill, CertiK, Adevar

Module	Live	Upgradeable	Upgrade Authority	Operational Authority	Pause Authority	Audit Coverage
Staking Platform (veALVA)	Yes	Yes (proxy)	Admin multisig (3-of-4)	Admin multisig (reward params)	Admin multisig	Quill, CertiK, Adevar
GaugeWeight Claims	Yes	No (immutable)	N/A	Owner (Merkle root submission)	N/A	Quill, CertiK, Adevar
BSKTX	In development	TBD	TBD	TBD	TBD	Pre-launch audit planned
BSKT Marketplace	In development	TBD	TBD	TBD	TBD	Pre-launch audit planned

A.2 Current Governance Parameters

Parameter	Current Value
Governance platform	Snapshot (off-chain)
Proposal threshold	3,000 veALVA
Quorum	20% of circulating veALVA
Pass rate	51% of votes cast
Epoch cadence	Weekly
Gauge voting cycle	Weekly
Admin multisig	3-of-4 threshold
On-chain DAO	In development (Q2 2026)

A.3 Current Fee Parameters

Action	Fee	Allocation
Create (new basket)	0.50%	0.40% Foundation, 0.05% SRV, 0.05% Burn
Deposit (add to basket)	0.50%	0.40% Foundation, 0.05% SRV, 0.05% Burn
Withdraw (redeem LPs)	0.50%	0.40% Foundation, 0.05% SRV, 0.05% Burn
Management (annual AUM)	1.00%	1.00% to basket manager

A.4 Current BSKT Parameters

Parameter	Current Value
Mandatory ALVA allocation	5% of basket value (Ethereum mainnet)
Minimum initial deposit	0.1 ETH equivalent
Rebalancing mode	Manager-initiated (manual)
Emergency Stables target	95% USDT / 5% ALVA (WETH fallback)

Parameter	Current Value
Active baskets (Ethereum)	4
Completed governance epochs	8

A.5 Current Price Oracle Configuration

Parameter	Current Value
Primary price source	CoinGecko API
Planned migration	1inch price feeds
Price update trigger	On user interaction (deposit, withdraw, rebalance)
Staleness limit	60 seconds (stale prices rejected, fresh fetch triggered)
Deviation threshold	Not currently enforced; planned with 1inch migration
Fallback	Transaction reverts if price unavailable; user retries
Default change authority	Admin multisig (transitioning to Alvara DAO)

A.6 Current Reward Parameters

Parameter	Current Value
Weekly ALVA reward emission	119,020 ALVA (Year 1)
Annual emission (Year 1)	6,189,049 ALVA
Emission decay	Decreasing annually over 31 years
Total BSKT incentives pool	88,000,000 ALVA (44% of supply)
Reward distribution	Merkle-tree claims via GaugeWeightClaims contract
Reward calculation basis	Pro-rata to LP holders based on gauge-vote allocation

A.7 Audit Reports

All finalised audit reports are publicly available at the Alvara GitHub organization. The following audits relate to the Protocol's mainnet launch and subsequent live mainnet updates through March 2026:

Auditor	Report	Scope	Findings Status
Quill Audits	BSKT Lab + Factory Audit (Oct 2023)	BSKT Lab, Factory, Pair contracts	All critical/high remediated
Quill Audits	ALVA Token AVAX Audit (May 2024)	AlvaraAvax token contract	All critical/high remediated
Quill Audits	Smart Contract Audit (Apr 2025)	Core protocol smart contracts	All critical/high remediated
CertiK	Security Assessment (Jun 2025)	Core protocol contracts, economic risk analysis	All critical/high remediated
Adevar	Platform Security Audit (Aug 2025)	Full platform and dApp security	All critical/high remediated

Auditor	Report	Scope	Findings Status
Quill Audits	Staking Contract Audit (Dec 2025)	Staking and veALVA contracts	All critical/high remediated
Adevar	1inch Integration Audit (Jan 2026)	1inch price feed integration	All critical/high remediated
Quill Audits	Protocol Re-Audit (Feb 2026)	Updated core protocol contracts	All critical/high remediated

Additional audit coverage will be commissioned for new modules (BSKTX, BSKT Marketplace, on-chain DAO) prior to their mainnet deployment.

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This document supersedes all prior versions of the Alvara Protocol White Paper.