



# VoidAI — Supporting Document

## 1. What is VoidAI?

VoidAI is an infrastructure layer that makes **Bittensor assets (TAO + subnet tokens)**:

- **Interoperable** — easy to move between Bittensor and major chains (Ethereum, Solana, Base, etc.)
- **Composable** — easy to plug into DeFi (DEXs, LP, lending, staking) using standard tokens and tools
- **Accessible** — simple paths for users and apps to enter and exit the Bittensor ecosystem

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## 2. The core problems VoidAI solves

### 2.1 Interoperability

Bittensor runs its own network and assets (TAO + subnet tokens). On their own, they are **not readily usable** on chains where most of DeFi liquidity lives (Ethereum, Solana, Base, etc.).

**Problem:**

“There’s value in TAO and subnet tokens, but most of crypto can’t easily touch it.”

**VoidAI answer:**

A secure, standardized bridge that turns Bittensor assets into familiar tokens on major chains.

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## 2.2 Composability

Even when you can bridge an asset, it's often hard to use:

- Not in standard token formats
- Not integrated with DEXs, lending markets, aggregators
- No clean way to keep staking yield while using DeFi

**VoidAI answer:**

- Wrap and standardize Bittensor assets
  - Issue **liquid staking tokens (LSDs)** so users can **earn staking rewards and still use DeFi**
  - Provide an **SDK** that lets any app integrate these assets without reinventing infrastructure.
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## 3. CCIP-Powered Multi-Chain Bridge

Using CCIP as the backbone for cross-chain operations ensures **decentralized security, universal compatibility, and atomic execution** across ecosystems.

Maintaining a 1:1 mapping between Bittensor-native tokens and their wrapped representations.

### How it works (conceptually)

#### 1. Bittensor → Ethereum (entering the hub)

- TAO or subnet tokens are locked/held on the Bittensor side.
- A wrapped representation (e.g., wTAO, wSubnetToken) is minted on Ethereum.

#### 2. Ethereum → Other Chains (via CCIP)

- Wrapped token on Ethereum is locked or burned.

- A corresponding token is minted or unlocked on the destination chain (e.g., Base).

You never have “extra copies” — only **one spendable representation per unit of underlying value**.

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## 4. Router

The **Router** is the logic that figures out:

“Given what the user has and what they want, what path should we take across chains, pools, and bridges to get them there?”

It’s the “travel planner” for assets.

Demo: <https://x.com/v0idai/status/2010805362493124899?s=46>

### Why it matters

Users and apps get **one unified interface** instead of manually dealing with:

- Multiple chains,
- Multiple pools,
- Multiple bridges.

Builders can rely on the router to do the heavy lifting for best-path execution.

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## 5. LSDs are now LIVE (Liquid Staking Derivatives)

### 5.1 What they are

**LSDs** are tokens that represent:

- A **claim on staked TAO or subnet tokens**, plus
- The **staking rewards** those assets earn over time.

Examples (naming illustrative):

- **stTAO** — liquid representation of staked TAO.
- **stSubnetX** — liquid representation of staked subnet token X.

You can think of them as “interest-bearing versions” of TAO/subnet assets.

## 5.2 What users can do with LSDs

### 1. Earn staking rewards

- Simply holding LSD over time reflects accumulated staking yield.

### 2. Use LSDs in DeFi

- Provide liquidity (e.g., stTAO/USDC pools).
- Use as collateral where supported.
- Trade them across chains via the bridge.

### 3. Combine staking + trading fees.

- For example, LP in an LSD pool:
  - You earn staking yield via the LSD itself.
  - You earn **trading fees** on swaps in that pool.

## 5.3 Why LSDs matter for Bittensor

Without LSDs, users face a tradeoff:

- Stake and earn yield **or**
- Bridge/use tokens in DeFi (but **lose staking yield**)

With LSDs, they can do both:

“Stake Bittensor assets + stay liquid + use them in DeFi across chains.”

This is the key to real **composability** for TAO and subnet tokens.

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## 6. SDK (Developer Toolkit)

Projects can use the **SDK** to:

- Initiate bridge transfers,
- Call the router for quotes and routes,
- Integrate LSDs into products (vaults, strategies, wallets),
- Build new DeFi use cases around Bittensor assets.

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### Summary

VoidAI is the infrastructure that turns Bittensor from a mostly self-contained network into a **multi-chain, DeFi-native ecosystem**.

The **CCIP-powered bridge** enables TAO and subnet tokens to move securely between Bittensor, Ethereum, and other chains.

The **router** makes those moves innovative and user-friendly

**LSDs** make Bittensor assets yield-bearing and composable, so users don't have to forfeit staking rewards to use DeFi.

And the **SDK** makes it easy to integrate with wallets, DEXs, and apps. Together, these components solve Bittensor's.