

Whitepaper: AADB (Australian Dollar Backed Protocol)

Version 1.0

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Status: Live on Avalanche Fuji Testnet

Abstract

The **AADB (Australian Dollar Backed)** protocol introduces a next-generation decentralized stablecoin pegged to the Australian Dollar (AUD). Built on the high-performance **Avalanche** network, AADB employs a novel **Hybrid Stability Mechanism** that combines algorithmic supply adjustments with a partial over-collateralized fallback system. This approach solves the "Stablecoin Trilemma" by balancing **scalability** (via algorithmic expansion), **stability** (via collateral vaults), and **capital efficiency**. Furthermore, AADB pioneers the adoption of **ERC-4337 Account Abstraction**, enabling users to transact without native gas tokens, radically simplifying the user experience for mass adoption.

1. Introduction

1.1 The Market Gap

While the US Dollar dominates the stablecoin market (USDT, USDC, DAI), the Australian Dollar—the 5th most traded currency globally—lacks a robust, decentralized, and scalable on-chain representation. Current options are either centralized (custodial risk) or fragmented.

1.2 The AADB Vision

AADB aims to become the premier DeFi-native representative of the Australian Dollar. It is designed not just as a store of value, but as a transaction layer for the future digital economy, enabling seamless payments, remittances, and robust DeFi yields for AUD holders.

2. Core Architecture

AADB distinguishes itself through a modular architecture composed of four sovereign but interconnected systems.

2.1 HybridPeg™ Stability Mechanism

Unlike purely algorithmic coins (prone to "death spirals") or purely over-collateralized coins (capital inefficient), AADB uses a dynamic hybrid model:

1. Algorithmic Rebalancer (The Growth Engine):

- Utilizes the **Pyth Network Oracle** for real-time, high-fidelity AUD/USD price feeds.
- Expansion:** When $Price > \$1.01 \text{ AUD}$, the protocol mints new AADB. This supply is sold into the market to lower the price to peg, while simultaneously deepening protocol-owned liquidity (POL).
- Contraction:** When $Price < \$0.99 \text{ AUD}$, the protocol buys back AADB using its reserves and burns it, reducing supply to restore the peg.

2. The Vault (The Safety Net):

- A decentralized "Central Bank" fallback.
- Users can mint AADB by depositing **USDC** collateral at a strictly enforced **150% Collateralization Ratio**.
- This ensures that even in extreme volatility, there is always a hard price floor backed by real decentralized assets.

2.2 Protocol Owned Liquidity (POL)

The **Liquidity Manager** contract acts as an automated market maker. Instead of renting liquidity via incentives, the protocol owns its liquidity on **Trader Joe**.

- Revenue Generation:** Trading fees from the liquidity pool accrue to the protocol, not external LPs.
 - Deep Depth:** As the protocol expands, it automatically adds to the LP side, creating an ever-deepening moat of liquidity that makes it harder to de-peg.
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3. User Experience & Innovation

3.1 Gas Abstraction (ERC-4337)

One of the biggest friction points in crypto is the need to hold a native chain token (AVAX) to send a stablecoin. AADB eliminates this via its custom **Paymaster** contract.

- **Pay in AADB:** Users can pay for transaction network fees using AADB itself.
- **Seamless Onboarding:** A user with 0 AVAX but 100 AADB can still transact freely.

3.2 Gasless Approvals (ERC-2612)

AADB implements the **Permit** standard, allowing users to approve spending via off-chain signatures. This removes the annoying "Approve" transaction step, saving time and gas.

4. Technical Specifications

Component	Specification
Network	Avalanche C-Chain (Fuji Testnet / Mainnet Ready)
Token Standard	ERC-20 + ERC-2612 (Permit) + ERC-4337 Support
Oracle Provider	Pyth Network (Low latency, confidence intervals)
DEX Integration	Trader Joe (JoeRouter02)
Contract Security	OpenZeppelin Hardened (Ownable, Pausable, ReentrancyGuard)

5. Tokenomics

- **Ticker:** AADB
- **Decimals:** 18
- **Initial Supply:** Elastic (Minted against demand)
- **Hard Cap:** None (Algorithmic)
- **Fees:**
 - Vault Minting Fee: 0% (Incentivized)
 - Redemption Fee: 0.5% (Prevents spam arbitrage)

6. Roadmap

Phase 1: Inception (Completed)

- [x] Smart Contract Development (Solidity 0.8.20)
- [x] Unit Testing & Integration Testing
- [x] Deployment to Avalanche Fuji Testnet
- [x] Oracle Integration (Pyth)

Phase 2: Security & Optimization (Q1 2026)

- [] External Security Audit
- [] Integration with Fireblocks/OpenBlocks for Institutional Access
- [] Bug Bounty Program

Phase 3: Mainnet Launch (Q2 2026)

- [] Launch on Avalanche Mainnet
- [] Seed Liquidity on Trader Joe
- [] Partnership with Australian Fintechs

7. Conclusion

AADB represents a mature evolution in stablecoin design. By learning from the failures of predecessors and leveraging the speed of Avalanche, it offers a robust, user-friendly, and capital-efficient currency for the Australian market. It is not just a token; it is a monetary network designed for the next billion users.

Disclaimer: This whitepaper is for informational purposes only. AADB is currently in a testnet environment. Cryptocurrency investments rely on emerging technologies and involve risk.