Open Application Track

Pyth Oracle Implementation in Stylus

ARB Requested: 1,000,000
Rationale for Funding: Pyth's proposal represents an excellent opportunity for the Arbitrum ecosystem to showcase the capabilities of Stylus through their proposed oracle implementation. Douro Labs brings a strong track record given their technical capability and experience in high-performance computing. If successful, the project could provide a cost-effective, high-performance oracle alternative, encouraging more DeFi applications to migrate to Stylus. While our program's current constraints led us to suggest a reduced budget, the team has maintained that 1M arb represents the minimum required for full implementation. Despite this cost, it is an application the committee **strongly recommends** to fund, given that it offers a compelling opportunity to showcase Stylus's capabilities through comprehensive benchmarking, demonstrating the benefits of migration to Stylus-based solutions. Pyth is excited about the potential Stylus has to make its oracle feeds cheaper and the committee believes it could have a significant positive impact that results in spreading a tangible example of the efficiency gains that come with Stylus to other protocols.

Sylow

ARB Requested: 700,000
Rationale for Funding: Sylow provides a critical opportunity to simplify and standardize cryptographic workflows for Stylus developers, particularly for applications like Renegade and Fairblock (existing Stylus teams), which already utilize similar cryptographic primitives but have had to go to great lengths to optimize these for their specific systems. By offering a canonical, audited version of these primitives, Sylow allows teams to focus on the application layer, leveraging highly optimized and secure cryptographic components without needing to reinvent the wheel. Additionally, with recent benchmarks showing in some cases, over 10x cost reductions for verifying ZK proofs on-chain, Sylow's ZKP capabilities present a significant opportunity for developers to build privacy-preserving and decentralized on-chain systems. This would enable a new wave of applications on Stylus, empowering developers without extensive hands-on cryptographic expertise to tap into advanced tools.The Sylow team has an exceptional technical foundation, combining expertise in physics, cryptography, Rust development, and high-performance computing. With contributors experienced in designing hyperscale storage clusters, MEV systems, and cryptographic libraries, the team is well-equipped to deliver on the proposed milestones. Their track record includes developing Sylow itself in other ecosystems and other advanced mathematical libraries, demonstrating both the skills and focus required to meet the project's goals. Their diverse expertise across cryptography, blockchain infrastructure, and mathematical rigor positions them as leaders in delivering critical cryptographic primitives for Stylus.

Nuffle Labs

ARB Requested: 500,000
Rationale for Funding: Nuffle is an innovative protocol that aims to enable restaking to EigenLayer with any token from any chain. The committee recommends reviewing this 2-pager provided by the team that summarizes the Nuffle Protocol. The Nuffle founding team is exceptionally strong, having previously been core contributors to NEAR Protocol, where they formed the NEAR Modular team and built NEAR DA, the #3 data availability layer by Total Value Secured. Additionally, Arbitrum is a critical part of their roadmap due to its DeFi ecosystem and upcoming potential plans for stARB. Nuffle has also indicated it has plans to expand to Orbit rollups, further integrating with the Arbitrum ecosystem.

While the Nuffle team is initially developing their smart contracts in Solidity for EVM-compatible L2s, their applications propose to replace the initial Solidity contracts with Stylus-based versions once rewritten. With Stylus, components of the Nuffle protocol that were originally planned to run offchain, such as risk assessment systems for stakers, would be able to operate directly onchain. Running this logic onchain ensures greater transparency, security, and trust. Furthermore, the Nuffle team expects an improved developer experience and enhanced security guarantees by leveraging Rust through Stylus.

Syndicate MintVM

ARB Requested: 210,000
Rationale for Funding: Syndicate's MintVM proposal showcases a novel use of Stylus as an interpretation engine, pushing the boundaries of what can be done on-chain by enabling SQL-like expressions and bridging capabilities for high-throughput applications. While initially tailored to token minting for gaming and social use cases, its open-source components, such as Stylus-based SQL parsing and bridging, could unlock broader applications and inspire innovative research into on-chain interpreters. With Syndicate's proven expertise in rollup frameworks, their alignment with Arbitrum's ecosystem roadmap, and their success supporting Orbit chains like Degen, they are well-equipped to deliver. MintVM not only highlights Stylus's computational strengths but also abstracts complex blockchain processes, making it accessible for web2 audiences. This project positions Stylus as a key enabler for scalable and innovative applications, with long-term benefits for the broader Arbitrum ecosystem.

Ember: LP Optimization with Volatility-based Dynamic Fees

ARB Requested: 100,000
Rationale for Funding: With the upcoming launch and excitement of Uniswap V4, Stylus presents a significant opportunity to become the home for the most gas-efficient hooks, further incentivizing Uniswap liquidity to remain on Arbitrum by showcasing how Stylus is pushing the boundaries of DeFi. Ember utilizes Arbitrum Stylus for efficient on-chain volatility calculations to implement dynamic fees in Uniswap V4. By dynamically adjusting swap fees based on their volatility contribution, Ember rewards liquidity providers with optimized fees and minimizes

losses caused by inefficient liquidity ranges. The team has demonstrated capability by placing 3rd in the Uniswap Hook Incubator. While the project quality aligns with Stylus Sprint objectives, unfortunately other budget constraints and competing applications have led us to recommend pursuing funding via the DAO.

RFP Track

Moving Stylus: Move to Stylus-compatible WASM compiler

Category: Tooling for New Languages
ARB Requested: 500,000
Rationale for Funding: Move-based ecosystems like Sui, Aptos, and others are gaining traction and enabling seamless migration to Arbitrum through Stylus could significantly expand our ecosystem. Rather Labs brings the right mix of experience and technical expertise to take on this challenge and pave the way for Move developers to leverage Stylus effectively. Their well-structured milestones allow for an incremental approach, ensuring potential challenges are identified and addressed early, setting a strong foundation for success. They also have previous experience working within the Move ecosystems and building similar tooling alongside many expert rust developers on their team who are excited about the prospects of Stylus.

Trail of Bits: Add Stylus as a Solang compiler target

Category: A Solidity-to-WASM compiler
ARB Requested: 440,000
Rationale for Funding: Adding Solang support for Stylus is a compelling initiative that could significantly lower the barrier to entry for Solidity developers. However, its success will depend on whether it can deliver tangible benefits, particularly in terms of gas efficiency. Trail of Bits has the experience necessary and a well-structured plan, but this effort is more of a long-term research play—an investment to explore the possibilities and push the boundaries of what's achievable. While immediate benefits may be limited, the potential long-term upside is substantial. If optimized over time, this could make it effortless for existing Solidity-based applications across EVM chains to transition to Stylus, positioning Arbitrum as the go-to destination for most Solidity developers. In summary, it's a bet that the committee recommends to the DAO as worthwhile to fund.

StylusFuzz: Advanced Property Testing for WASM Contracts

Category: Enhanced Debugging Workflows and Tooling
ARB Requested: 408,200
Rationale for Funding: StylusFuzz is a high-impact proposal that leverages Runtime Verification's proven expertise to deliver a critical developer tool for the Arbitrum ecosystem. The tool will allow developers to perform advanced property-based testing for Rust contracts,

ensuring robust security and correctness. While Trail of Bit's also submitted an application for a fuzzer (Medusa), there are a few key differences that make it worthwhile to fund both. There are two categories of fuzzers available to developers:

1. Easy-to-use property testing based approaches which emphasize staying as close as possible to the developers existing experience and being useful in CI setting. StylusFuzz falls into this category.
2. High-powered simulation based fuzzers which require more setup and expertise but are more appropriate for longer fuzzing campaigns by security experts.

An additional difference is StylusFuzz's focus on formal verification via Runtime Verification's K Framework, while Medusa focuses on actual environment replication. A key distinction in design choice and overall usefulness for each audience.

Given that the Stylus is geared towards the power user and the developer community is still relatively small, the committee made it a priority to fund Medusa in its initial budget. However, when anticipating the targeted growth of Stylus, a tool like StylusFuzz will be very useful to onboarded developers.

As a team, Runtime Verification has put together a strong roadmap and are already working closely with several Stylus projects. Overall, it is an application that demonstrates clear value for the Stylus ecosystem and is one we highly recommend the DAO funds.

CodeTracer

Category: Enhanced Debugging Workflows and Tooling
ARB Requested: 250,000
Rationale for Funding: CodeTracer brings a highly valuable debugging solution to Stylus with its time-travel debugging capabilities, making it easier for developers to troubleshoot and optimize their contracts. This tool would not only be used by developers, but potentially also block explorers to provide users an interface to seamlessly replay and browse through transaction execution (similar to Tenderly) for Stylus contracts.The tool can be seen as something that would greatly enhance the developer experience, but is not something that is necessarily a critical enabler of new use cases. This factor led to the committee prioritizing other debugging tools in the initial 5M budget, but nonetheless it is something we recommend as worthwhile for the DAO to support. The Metacraft Labs team has demonstrated strong expertise in similar projects, and their structured roadmap provides confidence in execution. In summary, investing in developer experience tools like CodeTracer can play an important role in driving broader adoption and reducing friction for new developers entering the ecosystem.