

## Abstract

- Arbitrum's robust technology, deep liquidity, and vibrant community have made it a leading choice for builders.
- However, with the expansion of Orbit chains, a gap around the interoperability features of the stack has muted these strengths and led to
- a fragmented user experience, liquidity inefficiency
- Arbitrum narrative falling behind compared to other rollup ecosystems
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- Arbitrum narrative falling behind compared to other rollup ecosystems
- We must improve interoperability to fully capitalize on the ecosystem's strengths.
- While improvements are coming, those would only put Arbitrum on par with other ecosystems.
- Open market solutions that enable a fast and secure flow of value across different chains.
- Offchain Labs has said they are adding features like Fast Withdrawal, Layer Leap and Chain Mesh (eg. clusters)
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- Offchain Labs has said they are adding features like Fast Withdrawal, Layer Leap and Chain Mesh (eg. clusters)
- There is a larger opportunity to again lead the industry, position Arbitrum as the first Chain-Abstracted Ecosystem

and enable seamless interoperability across Orbit chains. This will unlock:

- Builders to create the best experience for their users
- A unified and engaging narrative

for the Arbitrum ecosystem

- Arbitrum One as the backbone hub of liquidity

, enhancing the liquidity on all the Orbit chains while driving lasting network effects for its DeFi ecosystem

- Arbitrum as the [best place to build on

](<https://forum.arbitrum.foundation/t/unifying-arbitrum-dao-s-vision-mission-and-goals/26537/6>)

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- This proposal advocates the adoption of a comprehensive chain abstraction package that bootstraps and promotes this stack across all Orbit chains. It outlines a phased implementation, beginning with a working stream to define technical solutions, budget asks and then initiate an RFP process that leads into implementation.

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## Motivation

This proposal builds on a vision I previously outlined for Arbitrum to become the [Home of Builders](#)". This case focuses on the broader Orbit stack, one pillar necessary to strengthen Arbitrum's position with builders in the onchain ecosystem.

As an ecosystem, we should always ask ourselves: "Why should a builder launch on the Arbitrum/Orbit Stack versus the alternatives?"

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A high-level analysis of the major stacks available for launching a new rollup highlights the following:

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## Tech

Arbitrum excels with its tech stack—a battle-tested, customizable, and forward-thinking stack for launching L2s or L3s. Shorter block times, sovereign governance, Stylus, timeboost, and more allow developers features and flexibility not offered by competitors.

## Partnerships

Despite Arbitrum's technological strengths, it faces stiff competition from rivals offering aggressive grants and incentives for partnerships. This challenge is being addressed by the recently approved Strategic Partnership Budget proposal, in which the Foundation's warchest has been increased specifically to secure more Orbit partnerships.

In the realm of pure incentives, it is notable how other ecosystems have developed programs that involve all the chains of the stack (Optimism, for example, with its RPF and the Superfest), while the Arbitrum DAO has only focused on Arbitrum One initiatives.

## Interoperability

From a purely technological perspective, Orbit Chains currently rely on an optimistic security model, with the well-known 7-day withdrawal period. Over time, these chains are expected to evolve toward a zero-knowledge verification system at the settlement layer.

In their current form, Orbit chains face limitations compared to zk-stack solutions, which provide faster settlement either on the base layer or, more likely, on an intermediate layer (the AggLayer).

To address this short-term limitation, Arbitrum is planning to

### 1. Introduce Fast Withdrawals

, which use a committee to expedite the process. However, this changes the trust assumptions of a rollup and is recommended only in specific cases.

### 1. Enable Clusters

, which allow rollups to fully trust the sequencer of another rollup, enabling fast and secure movement of data and funds between the clustered entities.

### 1. Layer leap

: This feature will allow users to move funds directly from Ethereum to an L3 Orbit chain in one transaction. This helps with interoperability by reducing the number of transactions and overhead required from the end user when using app chains on L3s.

For the full explanation, see here: [Your Chain, Your Rules, with Arbitrum Orbit | by Offchain Labs](#) (October, 2024) and [Your Chain, Your Rules: Offchain Labs' Technical Roadmap to Fuel Arbitrum Innovation](#) (August, 2024)

## Differing approaches - Optimism vs Arbitrum

[Optimism](#), on the other hand, is working toward enabling seamless interoperability across its Superchain, where all chains will share the same trust configurations and assumptions. This setup allows for trustless, 2-second message passing across all chains in the alliance.

It's worth noting that Arbitrum Clusters ([now Chain Mesh](#)) can form a similar network pattern to Optimism's Superchain, but with a more bottom-up approach.

Although Optimism's top-down approach comes with tradeoffs, such as forced centralized upgradability and strict chain requirements, it also provides a unified ecosystem that appeals to builders who align with its vision.

## Ecosystem Narrative

In conversations around L2 chain ecosystems, the Orbit nomenclature is often overlooked and the crypto space generally does not give it the same attention that its competitors receive.

See this example of [x.com](#) between @TheDefiSaint

and @AndreCronjeTech

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There lack of interoperability among Orbit chains seems to impact the cohesive ecosystem narrative or information as to how this will one day be achieved.

Compare it with the Superchain narrative—a powerful, cohesive ecosystem where every chain supports one another—a rising tide that lifts all boats. In contrast, Orbit chains often feel more isolated, with no clear reason or cohesive narrative beyond the technology and scattered incentives driving builders to Arbitrum.

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Notice how the message is positioned around the Superchain, not the OP stack.

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## Rationale

Back to the question: Why should builders choose Arbitrum?

Launching a new chain requires being as interconnected as possible with the rest of Web3—not just for its own sake, but to enable a seamless inflow of liquidity and users. Builders want to be supported by an ecosystem, knowing they are not fighting this battle alone.

The solutions rely on two pillars:

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- Culture

: A broad discussion needs to happen across members of the Arbitrum ecosystem and Orbit chains. Defining positioning, narrative, and messaging to highlight the benefits of building on the Orbit stack is essential. Ecosystem-wide initiatives should focus not only on Arbitrum One but on the whole ecosystem. While significant work is required in this area, it is out of scope for this proposal.

- Interoperability

: The focus of this proposal is not only catching up with other stacks but providing added value that becomes a differentiator.

Fortunately, the open market can provide solutions that enable fast and secure flow of value across different chains. However, enabling fast interoperability alone would only put Arbitrum on par with other ecosystems.

Builders need universal accessibility—onboarding users from anywhere so that they can choose Arbitrum or an Orbit chain as their home without having to spread resources thin across different chains.

This will position Arbitrum as the first Chain-Abstracted Ecosystem: an ecosystem ready for mainstream adoption where everyday users can use apps without dealing with the complex interactions that cross-chain (and blockchain) operations normally require, such as bridging, buying a gas token, and spending gas fees.

[Check](#) the type of experience that we can enable (ex. By Particle Finance):

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To bring this vision to reality, it is necessary to help bootstrap and promote this stack across all Orbit chains, and this is the purpose of this proposal.

## SO WHAT: Benefits to Arbitrum and Orbit Chains (post chain abstraction stack)

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### 1. Enhanced User Experience

: Users enjoy seamless interactions without worrying about underlying specific L2. This experience is becoming the standard, Arbitrum should keep pioneering the space.

### 1. Stronger Ecosystem

: Interconnected Orbit chains foster collaboration and shared growth. An invisible net that brings all chains closer together, without limiting builders' freedom.

### 1. Competitive Advantage

: Differentiates Arbitrum in the market by focusing on user-centric chain abstraction. Provide an out of the box package for new chains and new apps without technical limitations on

## Specifications

To achieve this vision, the following steps are proposed:

- Embrace the Necessity of Chain Abstraction

: Arbitrum can differentiate by providing builders with tools to offer the best user experience.

- Focus on an Intent-Centric Structure

: Intents are the most efficient way to realize this vision, though non-intent architectures can also be considered.

- Provide the Chain Abstraction Package

: Equip builders with fast, secure, and customizable out-of-the-box tools that enable seamless flow of funds and data.

## Leveraging Arbitrum One as a Trusted Liquidity Hub

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The intent-based design allows for the creation of flows where Arbitrum One sits at the center of cross-chain liquidity

.

Arbitrum One is already positioned as one of the most secure and trusted L2s.

With innovations pushed forward by Offchain Labs (see above), Arbitrum One can be trusted by other chains, meaning that fast movement of tokens will be enabled from Arbitrum to all Orbit chains without additional trust assumptions for Arbitrum One.

This enables greater capital efficiency for the chain abstraction stack.

The major benefit is that Arbitrum One can continue expanding its influence as a liquidity hub

, not only within the Orbit chains but also across all L2 ecosystems. Where liquidity is not used for cross-chain solving, it can be deployed in DeFi protocols, and vice versa.

The goal is not to isolate the Orbit chains from other ecosystems but to ensure that Arbitrum is at the center of the multichain economy.

## The Chain Abstraction Stack

The stack can be divided into several layers, each requiring specific solutions and partnerships

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### Key Terms

- Orbit Chains

: L2s or L3s within the Arbitrum stack, providing scalability and flexibility.

- Chain Abstraction

: enhanced user experience that is detached from any crosschain activity by hiding complexities like bridging and acquiring gas.

- Intent-Based Architecture

: Users specify their desired outcome, and the system finds the optimal way to execute it.

- Solvers

: Entities that optimize and fulfill user intents across multiple chains.

- Interoperability

: Ensures smooth cross-chain communication and value transfer.

- Chain Abstraction Package

: A toolkit, that can be implemented by builders with out-of the box solutions

- Universal Accessibility

: Builders can onboard users from any chain in a seamless way.

## Steps to Implement

### Phases:

#### Phase 0: Feedback and Discussion on Proposal:

- Open channels for DAO members to provide input.
- Communication with various ecosystem stakeholders

## **Phase 1: Establish Work Stream, define budget**

- Open applications - declarations of interest
- Allocate a mini-budget (\$xx) to form a working group,
- led by [names], with participation from the Arbitrum Research and Development Program, Offchain Labs, and the Arbitrum Foundation.
- The objective is to define the ideal architecture that we want to and establish a structure for Phase 2 before the end of the year, so we can initiate the RFP process.

## **Phase 2: RFP Evaluation and Selection**

RFP Template [Example]

To attract the best projects for each layer, we suggest issuing RFPs with the following requirements:

- Project Overview
- : Explanation of how their solution works.
- Deployment Speed
- : Timeline for deploying to new Orbit chains.
- Technical Maturity
- : Evidence of how battle-tested their technology is.
- Incentive Requirements
- : Details on any incentives or support needed.
- Value Addition
- : How their solution enhances the chain abstraction stack.
- Security Measures
- : Information on security protocols and audits.
- Scalability
- : Ability to handle growth and increased demand.
- Availability
- : Plans for supporting developers and users.
- Open-Source Commitment
- : Willingness to contribute to open-source repositories.

## **Phase 3: Implementation and Ecosystem Narrative**

- Implementation
- Awareness and Distribution

# **Timeline**

## **Working group Proposal**

- Forum Discussion: 10/22-10/31

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- Open discussion: TBD
- Snapshot: 10/31-11/6

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- Tally: 11/6 - 11/20

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#### **Implementation:**

- Full budget to the DAO proposal: December. This can go out as an independent proposal or as part of more comprehensive initiatives that are being pushed by other DAO members.
- RFP open: December
- RFP evaluation: Jan/Feb
- Pilot? TBD: March
- Chain Abstraction Stack: rollout through Q2

## **Cost [Work in Progress]**

There are two types of costs: one for the workstream and one for the full implementation fund. The workstream will define the budget that delivers the highest ROI for the DAO to onboard the best chain abstraction package and submit it for a DAO vote.

Note: This could be similar to the Stylus Sprint.

This proposal doesn't involve building anything from scratch. It leverages existing "lego" pieces in the market, stacking them on the Orbit infrastructure.

I am confident we can ensure quick deployment, capital efficiency, and measurable impacts.

A decisive step towards making Arbitrum the Home of Builders.

## **FAQ**

I'd like some more background on chain abstraction, orbits and interoperability; where can I learn more?

- [Your Chain, Your Rules: Offchain Labs' Technical Roadmap to Fuel Arbitrum Innovation](#)
- [Your Chain, Your Rules, with Arbitrum Orbit | by Offchain Labs](#)
- [Chain Abstraction: Multi-Faceted Landscape Report](#)
- [The Ultimate Chain Abstraction Guide: A Deeper Look into the Stack](#)

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