

Introduction:

I want to present and discuss escrow-IBC (eIBC), a novel Inter-Blockchain Communication (IBC) protocol designed to overcome optimistic rollup based challenges and facilitate instantaneous, trust-minimized token transfers across Optimistic Rollups.

Link to full research paper:

[eIBC](#)

Escrow IBC

Escrow IBC: An IBC based protocol for fast trust-minimized bridging between optimistic rollups.

Current State

At present, Dymension RollApps have one proof design option which is Optimistic, it offers an impressive avenue for scalability. However, it comes with an intrinsic set of challenges. The current model involves a considerable dispute period for fraud detection, and the [Verifier's Dilemma](#) problem persists. Moreover, the process of bridging between RollApps at current state have a prolonged transaction finality times causing hindrances in practical applications.

Proposed Improvement

Escrow-IBC: Trust-minimized and Efficient Bridging

Understanding the Need

We need a more efficient way of bridging between RollApps hence the concept of eIBC. It aims to reduce the lengthy dispute window in an Optimistic Rollup.

The eIBC Protocol: A Synopsis

eIBC involves the protocol acting as a market for future receivables, reflecting the time cost of capital to reach the Dymension Hub after the dispute period. It also embodies the tail risk of the rollup being invalid or fraudulent, which should be mitigated completely by a verifying market maker.

The protocol introduces two roles - Alice, a user on a RollApp, and Bob, a relayer in the IBC ecosystem. Bob, taking on dual responsibilities as the eIBC message relayer and liquidity provider.

At a first step Alice initiates an IBC transaction, second Bob relays the IBC message from the RollApp to the Hub where it's softly verified and escrowed on the eIBC module.

At this time Bob or any other actor is able to fulfill the eIBC transfer by purchasing (with a discount) the escrowed IBC tokens on the Hub. If Bob's choosed to fulfill the eIBC transfer (discounted tokens) he sends the required tokens to the escrow module, which in turn forwards them to Alice. Whereas Alice's pending IBC tokens are re-routed to Bob's address and will be released at the end of the fraud proof dispute period.

The result is, Alice received her tokens instantly while Bob profited from buying discounted tokens which will get released after the dispute period.

Effect on the Ecosystem

Implementing eIBC has profound implications on the ecosystem. It can establish an equilibrium between the need to verify the validity of rollups and the value held within them.

Furthermore, the integration of eIBC promotes an organic system where market forces verify state machines, ensuring a seamless experience for users, and generating revenue opportunities for node operators.

Looking Forward

Future exploration of eIBC in the context of Optimistic Rollups is vital. Rigorous research and further implementation trials will shed light on the possible synergies it can create within the blockchain space.