BERT

(Bitcoin Envisioned Reward Token)

A Fairly Launched Decentralized Community-Driven Token on Cardano

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Abstract. BERT is the first truly decentralized token on the Cardano blockchain that is fully community driven. The token embodies the spirit of "by the community, for the community." From its inception to its future, the project strives to put the power in the hands of the users and ensure a truly fair launch. By leveraging Cardano's powerful eUTxO model, BERT aims to redefine how tokens are distributed and utilized.

1. Tokenomics

The total supply of BERT is 69 billion. What sets this project apart from others is the fact that 100% of the token supply is securely locked within a smart contract. **No tokens are reserved for developers, team members, or early investors**. All tokens are directly accessible to the community. This ensures that everyone has an equal opportunity to participate in the growth of the ecosystem.

2. On Concurrency

Concurrency is a fundamental challenge in the Cardano ecosystem due to its Extended UTXO (EUTXO) model. Unlike account-based systems, Cardano's approach necessitates that each UTXO be consumed exactly once per transaction. This introduces complexities for applications requiring multiple simultaneous user interactions, as they must avoid double spending the same UTXO.

To address this, BERT employs a mechanism that enhances scalability and fairness:

1. **UTXO Splitting for Scalability:** With every successful claim, the smart contract generates two new claimable UTXOs. Players claim tokens from one UTXO, while the remainder is returned to the smart contract and split into two equal parts to create new UTXOs. Each newly created UTXO must include a small amount of ADA (approximately 1 ADA) to remain valid, **as mandated by the design of the Cardano blockchain.** This requirement prevents dust accumulation and maintains UTXO validity. This mechanism creates a continuously expanding pool of available UTXOs, allowing more participants to interact with the system without relying on backend batching or centralized coordination. Eventually, when a player claims the last of the tokens from a particular UTXO, they also retrieve the associated ADA locked with that UTXO. By leveraging this approach, BERT achieves high concurrency while preserving its decentralized ethos.
2. **Randomized UTXO Assignment:** When a user interacts with the contract, they are assigned a random UTXO to claim. If by chance two users are assigned the same UTXO, only

the first user's transaction will succeed, as ensured by the deterministic nature of Cardano's transaction validation. The likelihood of this collision diminishes further as the number of UTXOs grows alongside the project.

3. **Decentralization:** By avoiding reliance on off-chain solutions, such as batching transactions in a backend, this design preserves the purity of a decentralized application. All interactions and state transitions occur transparently on the blockchain.

This solution balances scalability and decentralization while leveraging Cardano's unique strengths. It ensures that BERT remains accessible, fair, and capable of handling increased demand as its community grows.

3. Halving Mechanism

BERT introduces a built-in halving mechanism inspired by Bitcoin, ensuring a fair distribution of rewards over time. Players can claim tokens from the smart contract, but the amount rewarded per claim decreases progressively.

How It Works:

- For the first nine months, the reward halves every three months based on a predefined schedule.
- After the ninth month, the reward remains fixed at the amount established during the final halving.
- Claims continue to be possible until the entire token supply is exhausted.

Mathematically, the halving process is represented by the following formula for the reward at each halving stage:

$$R_n = R_0 \times \left(\frac{1}{2}\right)^n$$

Where:

- R_n: Reward after n months.
- R_0: Initial reward.
- n is the number of halvings that have occurred.

For example:

- **Month 1**: Players receive R_0 tokens per successful claim.
- **Month 4**: Rewards halve to $\frac{R_0}{2}$.
- **Month 7**: Rewards halve again to $\frac{R_0}{4}$.
- **Month 9 and beyond**: The reward remains fixed at $\frac{R_0}{4}$. until all tokens are distributed.

This model ensures that players can claim tokens as often as they like, but the maximum reward per claim decreases over time.

4. Claim Window

BERT employs a Claim Window mechanism to regulate token distribution and ensure a fair process for all participants. Every 10 minutes there is a 20-second window during which claims can be made. The smart contract strictly enforces that claims can only be made during these 20-second windows. Any attempt to claim outside this period will fail.

To further enhance fairness, each successful claim generates two new claimable UTXOs, ensuring that future participants have opportunities to claim tokens as well. This approach guarantees a steady flow of claimable tokens while maintaining a decentralized and balanced distribution model.

5. Fair Launch

The fairness of BERT is built into its very foundation. By locking 100% of the tokens in the smart contract, the project ensures there is no central control over token distribution. The only way to receive tokens is by claiming them through the smart contract, ensuring that no one has an unfair advantage. The playful game and the mascot associated with the token serve as a representation of the community's spirit, providing an engaging way for participants to earn tokens. By using the smart contract, the project guarantees that all tokens are distributed transparently and equitably, reinforcing the core values of decentralization and community ownership.

Important Notes

This Is Not a Sale: BERT is not being sold or offered as a financial product. Tokens can only be claimed through the smart contract, and there is no purchase or investment mechanism involved. This project is designed to be a community-driven initiative.

Do Not Send ADA to the Smart Contract: The smart contract is designed solely for distributing BERT. Sending ADA or any other assets to the smart contract will result in irreversible loss, as there is no mechanism to retrieve funds sent. Always ensure you are interacting with the smart contract as intended.

Support the Project: If you would like to support the project, donations in ADA are welcome. Contributions can be sent to the following donation address:

addr1q9muvfmvxaxnhsm9ekek86jj4n7pan0n3038rv9cnjgg0cxwrmddhxvxma08n5gnke2g3c2wtvy6mske29sp78jw5a8qfdt3ze