Project Blink

Decentralized World Bank

Blinkchain - Proof of Concept

https://blinkchain.org

[WORKING-DRAFT]

1 Objectives

1. Whitepaper Section & Level
    - Chain - Ledger,Consensus and Core Implementations
    - Script - UTXO scripts/proofs construction and attesting
    - OffChain - Client Side construction/propagation
    - Node - Validation, Ledger Outlook & Parameter construction
2. Process, Algorithm and Mathmatical Data
3. Existing Implementations and Documentation References
4. Viability and Feasibility of Development Notes
5. Technical Challenges and Issues
6. Non-Technical Challenges and Issues
7. Alternatives Offered and Outcome

2 Time Architecture (Chain [2.1])

- The Time Architecture in Blinkchain is segregated into Epoch = 10,000 blocks; Slot = 400 blocks ; Packet = 1 block.
- These time frames are not correlated to the ledger, as it only knows block heights. It is only taken in the following area
    - Election conducted every epoch (10,000 blocks)
    - Announcing Leaders for every Epochs, Slots and Packets
    - Taking Variable Data to form constraints in the consensus e.g., Total Volume in an Epoch, Each individual block time in an epoch/slot, etc
- Cardano, a UTXO based blockchain uses these timeframes, thus it is implemented and running https://developers.cardano.org/docs/stake-pool-course/introduction-to-cardano/#slots-and-epochs

- Its feasibility is proved with previous implementations and it does not affects or changes consensus protocols. As block heights are only taken for constraints, these time frames - Epoch, Slots and Packets are quasi and can be much more human readable. There are no alternatives, and the outcome can be achieved seamlessly.

3 Epoch Election

3.1 Bandwidth Proofs

3.1.1 Creating Proof (Node)

3.1.2 Attesting Proof (Script)

3.1.3 Selection of Proof (Node)

3.2 Vote of Confidence (Removal of Nodes)

3.2.1 Selection of Un-fit Nodes (Node)

3.2.2 Participation by Voting (Script)

3.2.3 Elimination & Result (Chain)

3.3 Producer Arrival

3.3.1 Repeated (Bandwidth Proof)

3.3.2 Selection of Proofs (Node)

3.3.3 Contestant Results (Chain)

3.4 Allocation of Leaders

3.5 Collateralization

3.6 Block Size & Time

3.6.1 Proof Selection (Node)

3.6.2 Block Size per sec Fixing (Chain)

3.6.3 Block Time Fixing (Chain)

3.6.4 Per Block Size Fixing (Node)

4 Legates

5 Blink Clocks

6 Hash-Reward Table