Token Use

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Aion: The third-generation blockchain network

TOKEN OVERVIEW

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INTRODUCTION

Decentralized systems and technologies are critically important to ensure a fair and prosperous future. That said, decentralization has traditionally come with the tradeoff of disorganization and unreliability. As such, over the course of history, as societies and industries have developed, we've accepted, and become accustomed to centralized actors holding the responsibility of coordination and order in our most important systems. Recently, with the proliferation of blockchains, we've begun to imagine how decentralization might actually be achieved. With all the various new blockchains being built, as relatively small experiments across the world, we can get a glimpse at a future in which balance is restored. Ironically, while only starting down this path not a decade ago, blockchains are already being faced with challenges that are most easily addressed by the same old solution: centralization.

The Aion protocol is a solution to the fast growing, fragmented blockchain ecosystem. The Aion network will be the common decentralized system in which blockchains of any protocol, whether private or public, will be connected. To learn more about the Aion protocol, please read the Technical Introduction paper.

As demonstrated with successful blockchains like Bitcoin and Ethereum, effective decentralization of large systems only works with an appropriate economic incentive system to influence participants towards a desired, honest behaviour.

The Aion network equally relies on such an economic system, and it's powered by the AION token. TAION tokens are the fuel used in operating the Aion-1 blockchain, building and deploying software applications, establishing bridges between blockchains, as well as customizing, creating, and connecting new participating blockchains. AION tokens are used both as a requirement to operate within the Aion network, as well as an incentive to maintain its integrity.

This paper briefly outlines the major functions of the AION token to its users.

AION-1 OPERATIONS

The Aion multi-tier blockchain network is like a computer network that provides a protocol and standard for dissimilar systems to communicate. In addition to information, the Aion network can pass logic and value amongst participating blockchains. Review the Aion technical overview to explore these concepts in more detail.

Aion-1 is the genesis implementation of the connecting blockchain in the Aion network. It provides the critical functionality of operating as a sort of router between other blockchains, as well as managing applications that connect to several blockchains. It is designed to have a fair, distributed, open blockchain architecture that is capable of fulfilling the requirements specified in the multi-tier blockchain network architecture. To meet operational scale and enable wide participation in its consensus validation process, Aion-1 will also employ a representative consensus model.

Network consensus and validation

This consensus model will allow Aion-1 participants to back validators who actively participate in the consensus process, enabling a drastic increase of participation beyond what conventional consensus algorithms would technically allow for. The conceptual design behind a representative consensus model is similar to that of a representative democracy, in which candidates register themselves and are elected based on the votes they receive from their constituents. However, in Aion-1, validators must be supported by backers, and each backer receives a share of the validator's reward. Additional detail regarding validation and backing in Mainchain operations can be found in our publications, available on Aion's website.

Network Validators

Any node on Aion-1 can self-nominate and register to become a Validator, but they require sufficient backing before being accepted into the consensus process. One method of backing Validators is by staking AION tokens. Proportionate to their backing, participants staking these tokens share in the validation rewards generated in the consensus process. The network maintains and updates a network-wide registry of Validators. Validators only become active by being among the most backed Validators on the network.

Backing

Backing refers to either staking AION tokens or resources (proof-of-intelligence - see Aion's website for more detail) towards a particular Validator. The network is designed to be a hybrid network that emphasizes a duality of parties to properly distribute power and monetary value evenly across the network. The backing algorithm is broken into two distinct categories:

- Backing by staking
- Backing by solving (see publications for more detail)

Staking

Backing through tokens is done through staking AION tokens towards a particular Validator. The implication of this is that the tokens are escrowed by the network until the end of the term, at which point the tokens are returned to the user (provided no malicious actions have occurred). Or the user can decide to keep their stake with a Validator for the next term. In return for staking, the backer receives a portion of the validator's reward. The reward is proportional to the amount staked.

Transactions fee

Every transaction sent on Aion-1 carries a fee, payable in AION tokens. These fees are determined by the current network resource availability, as well as the source and destination of the transaction. The transaction's originator will be responsible for paying for transaction fees. The transaction fees will be pooled and distributed to participants in Aion-1's consensus process.

BLOCKCHAIN SOFTWARE APPLICATIONS

On Aion-1, decentralized applications can be built that integrate data and logic from any blockhain connected to Aion. AION tokens are the fuel used to power these applications. Measured based on the complexity of an application, and the computational resources required to run it, there is a cost to running every Aion-native software application.

Applications deployed on Aion-1 will utilize resources from the Aion Virtual Machine (AVM). The AVM provides the infrastructure for one of the primary functionalities of the connecting blockchain, allowing the abstraction between the blockchain and application-specific logic and paving the way to powerful interchain applications (see publications for more detail). Applications built on Aion-1 will be able to receive inputs from and provide outputs to all participating blockchains. This enables truly decentralized applications. AION tokens will be consumed to use the resources of the AVM.

INTERCHAIN BRIDGES

A bridge is a communication protocol that facilitates communication between the participating network and the connecting network. A bridge is composed of its own distinct network of validators that assures translation of protocols and accountability between blockchains.

Bridges are directional; the source blockchain is the chain where transactions are emitted and the target blockchain is the chain where the transactions are forwarded.

A bridge has two main responsibilities:

- Signing and broadcasting an interchain transaction only if they have been sealed in the source blockchain and an interchain transaction forwarding fee has been paid.
- Updating the cothe bridge registry on Aion-1 as to the current merkle hash of the participating blockchain.

Building a bridge requires AION tokens to be staked and registered into a bridge registry on Aion-1.

Micro-economy of Connector Services

Any node can build a bridge to connect a blockchain to Aion-1. After staking the initial AION tokens to the bridge registry, the bridge creator sets bridge fees and terms, payable in AION tokens. Once the bridge is built, other nodes can join as validators by staking AION tokens to the same bridge registry. Bridges are designed to be flexible in their configuration and allow for market efficiencies and differentiated offerings. Participating blockchains can be connected through multiple bridges, each providing a different level of service catering to different participants or types of transactions.

Interchain transactions

An interchain transaction is a trust-free message between blockchains a critical infrastructure component powering interchain communication. Interchain transactions allow any connected blockchain to exchange information. Interchain transactions are initially created on a source blockchain and then processed and forwarded by bridges and Aion-1 before finally reaching the target blockchain. The creator of an interchain transaction must pay a transaction fee for the communication cost using AION tokens. These transaction fees will be used to compensate and incentivize validators and bridges.

PARTICIPATING BLOCKCHAINS

AION tokens can be used in the creation and customization of new Aion-compliant blockchains. Fees will be determined by the customized components used. The first Aion-compliant blockchain will be available from Nuco, and an alpha product will be available upon token launch. Nuco's blockchain is modular, enabling the user to deploy a blockchain network with the optimal components specifically designed to best suit their use case.

Aion-compliant blockchains refer to the participating blockchains that comply with the Aion protocol, and to which bridges can be established easily to forward interchain transactions through Aion-1. To be Aion-compliant, a blockchain must meet certain requirements including :

- Be decentralized in some fashion and support procedures commonly found in blockchains such as atomic broadcast and transactions.
- The exact implementation is left to the discretion of the bridging protocol and the network itself.

- Be able to recognize interchain transactions as distinct from regular transactions.
- Be aware of the consensus protocol used by the bridge and store a transaction deemed valid.
- Implement locktime or a similar feature that allows tokens to be held by the network for a period of time.

EXPLORING OTHER TOKEN USES

In addition to the uses of the token outlined above and in our technical paper, a number of other use cases are under consideration for further exploration and development. These are active areas of research and are being continually evaluated. Research, findings, and conclusions will be explored and published in coming papers (see publications for more detail).

Below are some of the possible future token uses we're exploring.

Aion Network Pegging

Participating blockchains would be able to use AION tokens to peg themselves to Aion-1. Pegging would enable a participating blockchain to effectively utilize the security and decentralization of Aion-1, increasing their immutability and resilience to attacks while still operating their own blockchain. This may be especially valuable to private blockchains that may operate as less decentralized networks on their own.

Aion Backed Tokens

Another feature that we are exploring is the concept of a standard for backing new tokens with AION. This mechanism would allow for the creation of new blockchains with their own tokens, while reducing volatility in the new token, as well as a lower barrier for individuals looking to try new networks and applications without being exposed to token fluctuation risk.

Similar in theory to the Gold Standard, this would require an amount of AION tokens to be locked and allocated to a specific network token. At any time that network token could be traded back for an AION token at a fixed exchange rate. This functionality aligns with private blockchain use cases, where private tokens represent internal assets in a closed system.

CONCLUSION

At the core of the Aion network, the AION token is used to incentivize participation, fuel applications, securely achieve consensus, and connect an inumerable number of blockchains. Participants have opportunities to engage in various aspects of Aion. From validating transactions, building and deploying software applications, and building and maintaining bridges between blockchains , all of these functionalities utilize the AION token in some form.

Aion is a vision of a connected future, where shared public infrastructure and enterprise infrastructure are seamlessly integrated and indistinguishable to the end user.. This foundational technology will enable the redesign of industries and societies, while reinforcing the roles of value-added contributors and challenging the roles of outdated intermediaries.

Its impossible to achieve this goal without a robust economic model that aligns interests and puts the technology into the hands of contributors around the world.