ASTL Token

Profitable and Confidence

Investment Solution

Based on AI Mining Project

White Paper

https://astl.io

ABSTRACT

ASTL Token Project from the investment company **Astol Advanced Limited** (Hong Kong) is an infrastructure project based on partners investing in the mining of various cryptocurrencies, operating on the principles of AI management, both in terms of servicing blockchain requests and distributing computing power, and in terms of using only "green" energy sources for multimining and intelligent energy management. The main goal of the project is to provide a simple and understandable access for each investor to receive a constant fixed income from the extraction of new types of cryptocurrencies for investors of different levels of training, from beginners to professionals.

The basis of the project is its own data centers and a constantly replenished fleet of computing power devices for mining using the capabilities of Artificial Intelligence and its own "green" energy. The **ASTL token** is the key product of the project and the link between professional equipment and the end user. Each token is backed by a portion of the computing power of the **ASTL project's device fleet**. Thanks to this, the token provides its holders with quick access to a stable income. Thanks to power management and AI-driven blockchain, cryptocurrency mining is 25-30% more profitable than investing in comparable projects.

Our project, unlike many similar ones, does not provide you with the opportunity to supposedly buy a piece of ASIC or GPU miner or its power. We do not do cloud mining. We do not promise to pay out depending on any kind of "distributed" mining power or the total mining hashrate of a particular cryptocurrency.

Everything that we do for you and what we see as the main task of our project is to give you a still unique opportunity to receive a stable passive income in cryptocurrency, depending only on you and your investments.

AI Mining based Profit

CONTENT

MINING

Today, the issue of Ethereum transition from Proof of Work to Proof of Stake is being very actively discussed. This change can significantly affect the cryptocurrency market, which is closely related to mining. Each investor must understand what positive and negative aspects this change brings. It would not be an exaggeration to say that Proof-of-Work is the main idea behind Bitcoin, which gave rise to the development of crypto-exchanges: it is it that serves as the basis for a distributed ledger. First you need to understand what mining is. Mining is complex computer calculations that must be carried out in order to create a new block and add it to the blockchain.

Proof-of-Stake (PoS) and Proof-of-Work (PoW) are two general types of consensus mechanism which is a vital aspect of blockchain technology. Consistency mechanisms are critical to the operation of distributed ledgers, a fundamental element of blockchain technology that allows it to operate without a central authority. The main role of the consensus mechanism is to verify the information added to the register of records, ensuring its accuracy and validity. This ensures that the next block added to the network is the most recent transaction, preventing double spending or any other data changes in the system. Essentially, the consensus mechanism ensures that the entire blockchain network is collectively consistent with the contents of the ledger, in addition to ensuring secure and valid blockchain-based transactions.

Mining as it is

Recently, due to the growing popularity and spread of various cryptocurrencies, primarily bitcoin, an accompanying term called "mining" is increasingly being used. This word is translated from English

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as "mining". In relation to cryptocurrencies, the term refers to a process that involves the use of certain computing resources, which can be processors, video card units and other hardware, to process payment system transactions by creating new blocks, ensuring their security and creating new records in a common database.

To put it simply, but not quite correctly, mining is the extraction of cryptocurrency, most often bitcoins, which is explained by their most serious demand and popularity on the market at the present time. In fact, the owner of a hardware and software device, using its resources for the operation of a virtual payment system, collects and processes information about ongoing transactions with cryptocurrency. This activity is necessary in order for transactions to be carried out, a high degree of their security to be ensured, and the uninterrupted functioning of the entire peer-to-peer decentralized system to be carried out. The greater the number of miners and, accordingly, the resources of computers involved in the process, the more reliable and stable the operation of the system.

For processing information, the owner of a computer resource receives a reward in the form of a commission assigned by the owner of virtual money, or a reward in the form of a part of the cryptocurrency issued during the mining process. It is on this that one of the main principles of the operation of payment systems is based, involving the use of bitcoins and some other virtual money. First of all, those transactions are processed and carried out, where the highest commission is set. Therefore, transactions with zero commission can be carried out for a very long time.

Why do Bitcoin and other cryptocurrencies need miners? It is important to understand that the widespread belief that the need for mining and, as a result, miners will disappear after the release of, for example, the last bitcoin, is extremely far from the truth.

As already mentioned, no less important functions of mining are processing information, conducting transactions and ensuring the security of the functioning of the payment system. It is obvious that such work will always be required.

There are different methods of mining, both hardware and software, on various protocols and blockchains, and it is quite difficult to find an answer to the question of which electronic currency is the most profitable to mine. The fact is that the cryptocurrency market was formed only in recent years and is still in a very unbalanced state. New types of virtual money appear regularly. All this makes more or less accurate forecasting of the further development of the situation on the market extremely unlikely.

However, every year it becomes more and more difficult for single miners to make a profit by "mining" the most promoted cryptocurrencies, such as bitcoin or ether. Therefore, it makes some sense to pay attention to no less popular types of virtual currency.

It is important to understand that with the growing popularity of virtual money, it becomes more problematic to make a profit from mining. This is explained not only by the increase in the number of participants, but also by the arrival of significant financial resources in this segment of the market. As a result, mining individually becomes simply unprofitable and not profitable.

PoW protocol

Although there are several different consensus mechanisms today, PoW and PoS are the most popular blockchain consensus mechanisms. They vary greatly in functionality and pros and cons, as we will discuss in this part. Proof-of-Work (PoW) is built on cryptography, an advanced form of mathematics that once solved problems with an authentic transaction.

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Essentially, miners solve complex mathematical problems and receive credit for adding a verified block to the blockchain. Finding a solution to mathematical problems or asymmetric puzzles is not an easy task and involves the use of significant computing resources to solve them. No skills are required to solve complex problems; instead, brute force is needed. Once a computer guesses the correct solution to a puzzle, it checks other computers on the network. The system quickly checks for problems.

Contrary to the opinion of most bitcoin enthusiasts, PoW existed long before bitcoin or any other crypto asset existed. The idea of PoW was credited to Cynthia Dwork and Moni Naor in 1993, the same time that Markus Jakobsson coined the term "Proof-of-Work" in 1999. However, the creator of Bitcoin, Satoshi Nakamoto, was the first to put this fertile idea into practice.

As mentioned above, PoW involves miners solving a cryptographic puzzle to validate a transaction. Miners compete to solve the problem by providing the correct answer, also known as a hash. Once the computers on the network authorize each transaction, the miners are rewarded with their own blockchain currency, in addition to the transaction fee.

When mining bitcoin, for example, a group of network transactions is collected into a memory pool, also called a mempool. The miners then compete to verify each sale in the mempool, using significant processing power to solve a math puzzle. The first miner to solve the problem receives a block reward plus network transaction fees. Mempool is now verified and added to the blockchain in the form of a block. Hashcash (SHA-256) is a proof-of-work feature used by bitcoin miners to solve complex puzzles and add blocks to the block chain.

Key Features of Consensus Proof of Work.

- Asymmetric puzzles that prevent miners from solving the problem.

However, the network quickly checks for the correct answer.

- Solving the puzzle does not require any technical skills, but brute force.

- The best way to effectively solve the problem is to increase the processing power.

- Parameters when solving puzzles are updated after a certain period, so that block times can be consistent.

The main problem with PoW is that the computing power required is very energy intensive and negatively impacts the environment. For example, the annual energy consumption of the Bitcoin network is 57.6 TWh, which corresponds to all the energy consumed by Colombia.

PoS Protocol

Consensus in PoS is quite different from PoW in that there is no mining as the power of the currency replaces computing power. With PoS, miners do not solve asymmetric puzzles. Instead, the miner "freezes" or holds a few coins to validate a block of transactions. A miner, called a text block shell miner, is chosen using a deterministic approach, usually based on the total number of its coins. Asymmetric puzzles in PoS are much simpler, and miners only need to prove that they own a certain percentage of all the coins available in a given currency. For example, if someone owns 2% of all Litecoin (LTC), then, theoretically, he can mine 20% of all transactions with their rewards.

In PoS, as mentioned above, investors must put their coins into a specific wallet in order to be able to validate transactions. These coins fall into the category of "frozen" coins that do not participate in transactions on the network, which means that you cannot withdraw coins.

Once the coins are put on the stack, the validators stake on the block they think will be added next to the chain. If the selected block is added, they receive a block reward based on their stack.

In recent years, the crypto space has been moving towards PoS services due to the advantages it offers over PoW. PoS is undoubtedly better than PoW as stated below.

PoW vs. PoS

The PoW proof-of-work method (and also the principle) still confidently holds the status of a consensus algorithm, which is most often used by popular cryptocurrency networks.

However, in recent years, some blockchains have begun to attempt to switch between systems - for example, Ethereum, which should, in theory, switch to PoS by mid-2022, which supposedly should help the project to scale. And new blockchains generally use PoS, its variants or updates.

By comparing the principles of Proof-of-Work PoW and Proof-of-Stake PoS, we will try to predict the future and determine the prospects that open before them in the coming years.

To help you better understand the difference between the two methods, I'll look at them from different angles, in terms of consistency, power consumption, participants, and reward distribution systems.

Blockchain Sequence.

Blockchain is a chain of blocks consisting of transactions. The first block is called the primary block, followed by the following blocks. Each next block is connected to the previous ones, which makes the re-spending of previously spent "digital coins" unlikely.

Sequence in PoW.

Competing to add the next block to the chain, those miners who prefer PoW-based crypto-blockchains (Bitcoin, for example) use hardware with significant computing power and consume energy resources. There is a so-called "longest chain rule", when there is no certainty that the last block added will be the last one in the chain. There is a chance that another miner will add two consecutive blocks faster than competitors and invalidate the previous block. In this case, one chain becomes longer than the previous one. Therefore, bitcoin miners need to wait for at least six transaction confirmations (or the addition of six blocks), which will make the transaction final.

Consistency in PoS.

The PoS method, being one of the closest alternatives to PoW, sorts the blocks one by one in chronological order, but it does not involve any physical effort or energy-intensive processes. There is also no competition between validators, or, in other words, "auditor" participants. In PoS, the generation of one block takes not 10 minutes, as in the case of Bitcoin, but one or two seconds.

Participation in PoW.

In order to become a member of the PoW network, the user will have to purchase very expensive mining equipment. The larger the investment, the higher the chance of creating a new block. This will be an advantage for players who already use their mining machines, or even for those who have access to new technologies and updated versions of ASICs or GPUs used for mining in PoW networks.

Participation in PoS.

In PoS, all users who own a certain token can participate in the consensus algorithm. In a network with lower barriers, anyone can become a validator or block producer.

Staking pool projects like Cardano or Polkadot allow users to entrust the management of their tokens to a pool or well-established validator.

The condition for participation for staking pools or validators in PoS networks is to own a certain number (shares) of tokens and hold them for a certain time. Validators risk losing their share when using any malicious techniques such as double spending or coordinated attacks on the network.

PoW Reward Distribution.

In the Bitcoin network, miners receive a reward for each block, which consists of a transaction fee and a fixed price for a new block. However, every 4 years, after mining a certain number of blocks, this amount is halved. Such a process is called halving (halving, "halving", "halving") and is included in the source code of the Bitcoin protocol.

Thanks to the halving, bitcoin inflation is decreasing over time. At some point, it will reach 0%, that is, the miners will extract all of the existing 21 million "digital coins" BTC. Halving the "coins" used for rewards either doubles the price of bitcoins or increases the transaction fees – otherwise, the miners would not be able to profit and would shut down the equipment.

This is because the block size is fixed and updates such as the Schnorr authentication scheme will help improve the current TPS, but for the growing number of users these measures will not be enough. The Ethereum throughput is currently 25 t/s, but the implementation of PoS and the completion of sharding will allow hundreds and even thousands of transactions per second.

Distribution of rewards in PoS.

PoS networks reward users who offer a valid block to the blockchain. Rewards vary from blockchain to blockchain.

Some consist only of transaction fees, others are issued from a special budget for the first few years, until the network becomes more "run-in" and can provide enough transactions, the fee for which will cover the costs of the validators.

The degree of inflation or deflation of PoS "digital coins" is different for each protocol, and even chain governance can change over time, so I won't delve further into this topic for this article.

While in PoW only miners receive rewards in the form of new "coins" and transaction fees, in PoS it can be received by any user, even those who themselves do not participate in the consensus and are not included in any pool, as well as "Hodlers" (from English HODL, Internet meme, slang word that describes those who buy cryptocurrencies and hold them regardless of the market situation. HODL is sometimes deciphered as an abbreviation of hold on for dear life - "buy and hold", "hold at any cost," but in fact, the concept arose due to an extremely successful and funny typo in the word hold). This is why the distribution of tokens in PoS is more equitable.

Can PoS replace PoW?

A bit of history. The PoW method arose long before PoS, and the second was conceived as an improved version of the first, providing protection against DoS attacks and spam. PoW was "born" in 2008 when Satoshi Nakamoto published his paper on Bitcoin.

A functional PoS implementation that improved PoW to a certain extent was introduced in 2012 by the Peercoin cryptocurrency. Since then, the technology behind PoS has been updated many times by researchers and developers.

When evaluating PoW and PoS methods, it is also necessary to consider the use case of each algorithm; for example, a large number of smart

contracts are best used with PoS cryptocurrency blockchains. Once blockchain resolves the so-called trilemma of scalability, security, and decentralization, it will become a powerful answer to PoW networks that lack scalability.

Having resolved the issue with the proposal of a new block, a network with a well-protected cryptographic "lottery" will spend seconds on this operation, and not 10 minutes, like Bitcoin. Then PoS blockchains will outperform PoW, which will help ensure a severely limited transaction throughput.

Will the PoW protocol fit in the world of environmental activism?

The mass adoption of cryptocurrencies is influenced by environmental activism - mainly because Bitcoin and other PoW networks are very energy intensive, even considering the need to secure the network, or taking into account the right of each person to spend the energy he paid for for his own purposes.

Just look at Elon Musk and his frequently changing opinion about cryptocurrencies. He first announces that Tesla has bought cryptocurrency and will start accepting bitcoin as payment for their cars. He then feints with his ears and refutes his words, saying that nothing like this will happen until bitcoin miners start using exclusively renewable energy.

As for the possibility of coexistence of both algorithms, then I think there is not much point in further comparing PoW and PoS.

Certain steps and solutions can resolve this negative environmental aspect of cryptography once and for all. The technological growth of the blockchain industry leads to higher energy consumption, but it can be extracted from renewable sources such as wind or solar energy and eliminate the use of coal and oil. As soon as a turn in this direction begins, people will reconsider their attitude and agree that cryptocurrencies are

on the right track.

Will the transition to renewable energy take another two years, or even five years? Most likely. But timing is not that important. The most important thing here is to spread the word and get closer to the goal of making cryptocurrencies green by silencing the arguments of opponents.

Now we do not see the need to abandon PoW cryptocurrency blockchains. In the worst case, there will be an outflow of fundamentally weak users and investors, and I think our project will be able to live with this. In the future, there will be a place for "coins" both PoS and PoW.

<div align="center">Ethereum's expected transition from PoW to PoS.</div>

With the growth in the number of users, Ethereum began to experience scaling issues, which increases transaction fees. One block can contain about 15 transactions per second, which is not much for a network that is a platform for fungible and non-fungible tokens, smart contracts, decentralized applications and usually serves as the basis for the DeFi movement.

One of the decisions of the past years is to increase the block gas limit (indicates how many transactions will fit in a block).

But this is not the final solution, and we will have to wait for the implementation of a new version of Ethereum: Ethereum 2.0, often also called Serenity.

The main change compared to version 1.0 is the transition of the consensus algorithm from PoW to PoS, which does not depend on mining on specialized hardware devices, but selects transactions approved by validators. Such a move will increase throughput and save a lot of energy.

The second significant change is the so-called Shard Chains (from English sharding), over which the work of the network will be distributed, which will allow processing orders with a much larger number of transactions

and, as a result, reduce transaction fees.

It is not known whether the creators will have time to implement all the complex stages of the v.2.0 transformation if they aim to meet the expected deadline by mid-2022 or later. However, if they succeed without serious complications and delays, the entire crypto world will take a step forward. The number of transactions per second will increase from several tens to several thousand, and in combination with the second layers, up to hundreds of thousands.

Other protocols

Delegated Proof-of-Stake (DPoS) is similar in operation to PoS, except that it includes a voting and delegation mechanism to incentivize users to secure the network and validate blocks with coins left as collateral. Thanks to this pledge, users can participate in the voting, where delegates are chosen, who will be responsible for all aspects of conducting transactions. When the delegates are finally elected, it is important that they can agree on which transactions to reject and which to approve. Used in Cosmos, Tron, EOS.

This protocol is particularly reliable. Consensus algorithms are at the heart of every blockchain network. Using the right algorithm ensures fast and secure transaction verification, along with lower power consumption than PoW systems, DPoS also takes less time than PoS systems. Plus, the participants of this network are very motivated by the fact that the network pays well for the performance of its duties. How exactly can blockchains scale? There are two main categories of solving this problem - inside the chain and off it. Each approach has its pros and cons, so there is no single decision about what is more efficient and more promising.

Leased Proof of Stake (LPoS) is an improved version of the PoS algorithm.

Traditionally, in the PoS algorithm, each node holds a certain amount of cryptocurrency and can add the next block to the block chain. However, with Leased Proof of Stake, users can lease their coins to users holding full nodes.

The higher the node amount (together with the coins borrowed), the more likely it is that a full node will be selected to create the next block. If a node is selected, the user will receive a percentage of the transaction fees that this node collects. The protocol allows you to earn on mining activities without mining itself.

Proof of Elapsed Time (PoET) is a mechanism that prevents high resource usage and high energy consumption. The concept was invented in early 2016 by Intel.

Each participating node in the network must wait an arbitrarily chosen amount of time, and the first one to complete the designated wait time finds a new block.

Each node in the blockchain generates a random wait time and goes to sleep for a specified amount of time. The one who "wakes up" first is the participant with the shortest waiting time. It "wakes up" and includes a new block in the chain, passing the necessary information to the entire peer-to-peer network. The same process is then repeated to find the next block.

In **Simplified Byzantine Fault Tolerance** (SBFT), a single designated block generator collects and validates proposed transactions, periodically merging them into a new block. Consensus is provided by the Generator, which applies the rules (checks) agreed by the nodes (chain cores) to the block and assigned by the block subscriber. The other (multiple) designated block signers ratify the proposed block with their signatures.

All members of the network know the identifiers of the block signers and only accept blocks if they are signed by a sufficient number of signers.

Delegated Byzantine Fault Tolerance (DBFT) is a consensus mechanism that enables large-scale participation in consensus through proxy voting. The owner of the token, by voting, can choose the accountant he supports.

A selected group of accountants, through the BFT algorithm, reaches a consensus and generates new blocks.

Proof of Activity (PoA) is an example of a hybrid approach that combines two other commonly used algorithms, namely Proof-of-Work (PoW) and Proof-of-Stake (PoS).

In PoA, the mining process starts as a standard POW process with various miners trying to outrun each other in finding a new block solution with higher processing power. When a new block is found, the system switches to PoS with the new found block containing only the header and the miner's reward address.

Proof of Importance (PoI) is a mechanism that is used to determine which network participants (nodes) have the right to add a block to the blockchain. This process is known as block picking. In exchange for collecting blocks, nodes can charge fees for transactions in that block.

Accounts with a higher importance score will have a higher probability of being selected for block collection.

Proof of Capacity (PoC) is a consensus algorithm used in the blockchain and allows mining equipment to use the available hard drive space on the network to determine mining rights instead of using the computing power of the device.

Proof of Burn (PoB) protocol works on the principle of allowing miners to burn or destroy virtual currency tokens, which gives them the right to write blocks in proportion to the burned coins. Miners must provide evidence that they burned some coins, that is, they sent them to a verified address. This approach does not burn any resources at all.

Proof of Weight (PoWeight) - This consensus algorithm model "weighs" each user and determines their weight depending on the number of coins they own. The more coins, the better. This algorithm is highly scalable and energy efficient, which is its strength.

PoWeight guarantees that the majority of users will agree with the decision made. However, the big disadvantage of this algorithm is the block reward system - it is quite complicated.

Block length and scalability

Among the numerous parameters that determine the effectiveness of a particular blockchain, one of the leading roles is occupied by its ability to scale. That is, to maintain the effective speed of work with a significant increase in the number of active users and the number of transactions. And one of the ways that allows you to better adapt to increasing network load is to increase the block size. Therefore, we will consider this point in more detail.

Why is block size so important? Let's start with the fact that the term "blockchain" itself is translated as "chain of blocks". Each individual block represents a certain amount of data in which information about transactions is stored. Given this volume, as well as the speed of generating new blocks, you can calculate how many transactions per second (transactions per second - TPS) the blockchain can support.

Obviously, the higher the number, the better. Therefore, developers are actively looking for ways to increase it.

And in the context of the use of cryptocurrencies, this is especially true. After all, Bitcoin, even with all the second-tier solutions and other additions, gives out a maximum of 7 TPS. And Ethereum is still up to 15. For comparison, the Visa money transfer system generates up to 1700

transactions per second.

Therefore, in order to start to compete with traditional financial systems, cryptocurrency projects must significantly increase the speed of their work. However, simply increasing the block size is a temporary workaround that may lead to some problems in the future. Fortunately, there are other options for action, and we will now try to analyze some of them.

How exactly can blockchains scale? There are two main categories of solving this problem - inside the chain and off it. Each approach has its pros and cons, so there is no single decision about what is more efficient and more promising.

Scaling within a chain. It implies changing the operation of the chain itself in order to make it more efficient. The following options exist:

Reduce the size of transaction information. This allows you to place more translations in the building block. Bitcoin went the same way when they implemented the SegWit protocol. Reducing the length of the transaction and the information written in it led to a significant increase in throughput.

Increase the speed of block generation. Works up to a certain limit, since it takes some time for the confirmed data to propagate across the network. Otherwise, an unpleasant situation may result - later blocks will reach users earlier than their predecessors. And this will definitely cause a conflict with consensus algorithms.

Seamless communication between different blockchains. If the chains can directly interact with each other, then each of them will have to process less information. But yes, it is necessary to ensure 100 percent accurate data transfer between different blockchains. The Polkadot project works on this principle. Due to the joint work of several internal chains and smart contracts, it is possible to achieve a fairly efficient scaling of the system.

Segmentation.

Each transaction is divided into separate segments, which are confirmed and verified independently. Several parallel processes are much faster than one sequential one. This approach works in both PoW and PoS. Moreover, it was he who formed the basis of Ethereum 2.0, which plans to bring its speed up to 100 thousand TPS. However, this method also has disadvantages, mainly related to security. It will become much easier to earn rewards for "double proof", and fewer resources will be needed to support a 51 percent attack.

Reducing the number of validators.

The fewer checking nodes, the higher the speed of the entire network. EOS followed this path, limiting the number of possible validators to 21 nodes, which were chosen by a general vote among all token holders. This allowed us to increase the speed to 4 thousand TPS. However, a smaller number of checking nodes equals greater centralization of the network, and also significantly increases the risk of abuse of the granted powers.

Block size increase.

Probably the easiest way. The larger the block, the more data is placed in it. But the more difficult it is to mine, so users with more computing power get an advantage. BitcoinCash followed this development path, gradually increasing the size first to 8 MB, and then to 32 MB. However, it is impossible to increase the size to infinity, so this solution is only temporary. It also reduces the decentralization of the network. Which is especially interesting when you consider that the average block size in this blockchain is still kept at 1 MB. This idea also has other drawbacks, but about them a little later.

Out-of-chain scaling.

These are solutions that improve performance without changing the way

information is stored on the main chain. They are also called "second-level solutions". The following options proved to be the most effective:

Classic "second-level solutions".

They were first used in Bitcoin in the form of the Lightning Network. The nodes of this subnet can open channels between themselves to make transactions directly. Upon completion of the process, the channel is closed, and the data is encoded in a crowd and sent to the main blockchain. In addition, it allows you to reduce the price of transactions, since you do not need to compete with other users. A similar solution was implemented in Ethereum - Raiden Network. And after him - and a more general blockchain product Celer Network. Both of these projects not only conduct transactions outside the main network, but allow the use of smart contracts. The problem is that all of this is under development, so technical errors are still possible.

Sidechains.

These are branches off the main chain in which assets can move independently. In essence, the creation of "parallel paths" for the flow of transactions, which significantly reduces the load on the main chain. For the first time, this approach was also applied in Bitcoin - in the form of the Liquid sidechain. A similar solution was implemented in Ethereum - Plasma. Its significant drawback, however, is that each such side chain is controlled by certain nodes. Who needs to be trusted. But which theoretically can abuse their powers.

Arguments for and against simply increasing the block size.

Many believe that the key to more mainstream adoption of the Bitcoin blockchain lies solely in increasing block sizes. Since this will not only increase the total number of transactions, but also reduce costs. That is, the network will become both faster and cheaper. Also, "scaling up" enthusiasts emphasize that both sidechains and second-level solutions

are still at the "finishing stage" and are not ready for mass implementation.

But there are also some problems here. At the current level of technical development, node owners have no problem uploading new blocks. And it will not, even if you increase their size to 32 MB. However, if this process continues and the sizes increase to gigabytes, problems will begin. Both with the bandwidth of the Internet, and with the amount of memory on computers. Therefore, the blockchain will cease to be a network for "everyone and everyone", but will become a tool for "everyone with a really advanced computer, and even better - with a server or a system of servers." That is, increased centralization.

Also part of the problem is that as the block size increases, it becomes more difficult to "mine" it. More information needs to be processed to pick up the hash. And if now ordinary users can somehow compete with mining pools, then with an increase in the amount of information processed, they will have no chance. Which also means more centralization and a greater ability to intercept network control.

How are things going with the problem at the moment? At the moment - May 2022, the Bitcoin blockchain has not changed the nature of the blocks used since the introduction of the SegWit protocol. But he actively developed second-level solutions and sidechains. It was they who allowed the use of bitcoins for everyday purchases. When it comes to block growth, BitcoinSV went even further than Bitcoin Cash by increasing their block size to 2 GB. This, however, only led to an increase in the cost of maintenance and regular loss of data.

But this is not the limit. The ILCOIN project uses the RIFT protocol, which, according to its creators, allows you to create blocks up to 5 GB in size

and provides a TPS of 100 thousand. This is possible due to the fact that each large unit of information storage consists of smaller formations (only 25 MB) that do not need to be mined individually, since they are automatically generated by the "parent block".

The Ethereum blockchain hopes that a new proof-of-stake consensus algorithm, Casper, will help with scaling.

As part of the Cardano project, the Hydra system was developed, in which each user generates 10 "heads", each of which works as an independent channel that increases network throughput.

Thus, despite the significant work done by the developers, there is still no universal, safe and effective solution to the scaling problem. Yes, all of the above solutions contribute to a more efficient use of cryptocurrencies, but they are not all perfect. In addition, much depends on the individual characteristics of projects. So development is still ongoing.

PROJECT FEATURES

About the ASTL token

ASTL is an infrastructure project based on the investment of partners in the mining of various cryptocurrencies, working on the principles of AI management, both in terms of serving blockchain requests and distributing computing power, and in terms of using only "green" energy sources for multimining and intelligent energy management . The main goal of the project is to provide a simple and understandable access to the receipt by each investor of a constant fixed income from the mining of new types of cryptocurrencies for investors of different levels of training,

from beginners to professionals.

ASTL is a token for investing in the mining of various cryptocurrencies in various blockchains, including the mining of Bitcoin (BTC and BTH), Ethereum (ETH), Litecoin (LTC) and the list goes on, provided with real computing power on various protocols, the main of which is the SHA 256 protocol and ERC20. ASTL token holders get the opportunity not to depend on the rate of the cryptocurrency mined by mining, but, using part of the computing power of the Astol Advanced Limited fleet of devices, receive a monthly strictly fixed remuneration in USDT (Bsc20) directly from the general pool.

ASTL token is based on the ETH – ERC-20 blockchain

Contract link you can see there

ASTL token is reissued.

By purchasing an ASTL token in cryptocurrency or through fiat money, you immediately become the owner of the tokens that are credited to your account on the website https:astl.io. The tokens you bought are automatically recalculated into the appropriate amount in USDT (at the time the funds are credited), for which the corresponding accruals and payments are made, including referral, prize and bonus accruals that you received or will receive.

Initial issue 50,000,000 ASTL

First round of pre-sales 20% = 10,000,000 ASTL

Soft = $250,000

Hard = $2,000,000

Second round of presales 30% = 15,000,000

ASTL IEO/ICO 30% = 15,000,000 ASTL

Soft-Hard = $8,000,000

Investment distribution

All funds invested by you, regardless of their amount and type of payment, are used exclusively for investments in further growth of the project capitalization - increasing mining capacities on existing ones and creating new mining farms already equipped with AI-based management systems.

Investment portfolio

Our project is focused not only on the trivial bitcoin mining, but also on obtaining other cryptocurrencies from mining and rewards for transactions in the pool.

Because of this, your investments are distributed, so to speak, according to the share of mining of this or that coin in the following ratio.
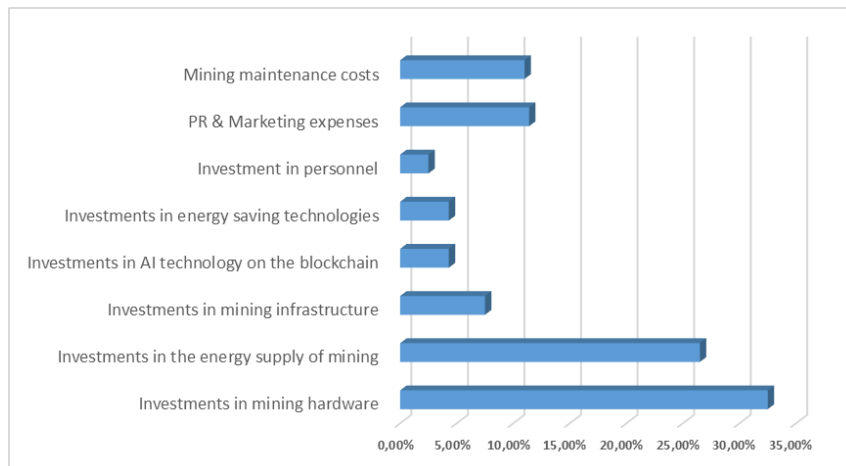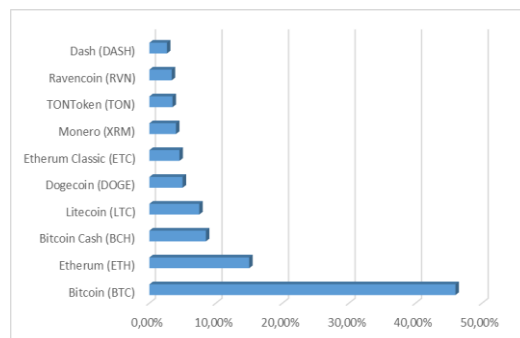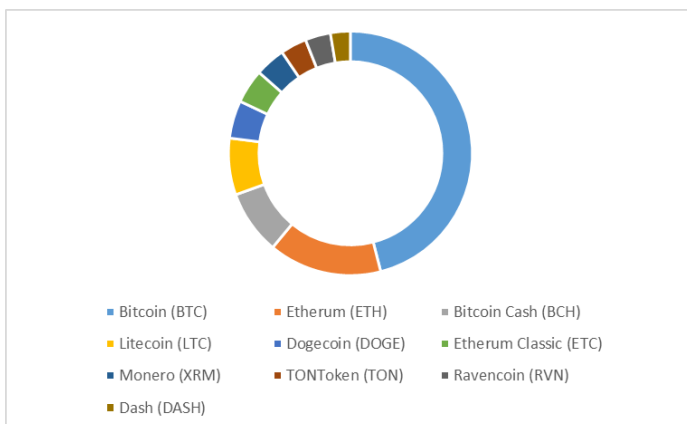
Referral, AirDrop and Bounty programs

This referral program was created as part of the ASTL Token project to attract attention to the project by disseminating information among potential partners. By registering your own account, you will receive a corresponding referral link, which you can share with your friends and acquaintances.

Anyone who uses the referral link provided by you can also register on the site and make a purchase. From any purchase made using your referral link, 2.5% of the amount of the purchase made in ASTL tokens, currently equal to USDT, will be credited to your personal account.

AI Mining based Profit

RoadMap

IDEA DEVELOPMENT JANUARY-MARCH 2022	In connection with the general stagnation of the cryptocurrency market and the fall in the overall profitability of mining, it was decided to create a new project in which a potential investor will be able to receive a constant stable income in hard cryptocurrency by investing in newly created diversified mining farms that will use "green" energy sources and AI as a system for managing energy consumption and settlement capacities in blockchains.
ASTL TOKEN PROJECT DEVELOPMENT APRIL-MAY 2022	Up to 45% of the merchant's budget is spent on commissions charged by a number of brokers, including banks, payment systems, advertising agencies and other overhead costs. The ASTL token was created on the by definition cryptographically secure Erc20 blockchain - the registry is distributed across all nodes of the system, which makes hacking almost impossible. All ASTL smart contract code used for the token sale and storage account has been fully verified by experts specialized in smart contract security auditing. We have created a non-tradable digital token that can later be used as a currency, asset representation, virtual stake, proof of membership or anything else after the IEO/ICO. Since the ASTL token uses a standard API, your contract will automatically be compatible with any wallet, other contract or exchange that also uses this standard.
ASTL PRESALE START JUNE 2022	A number of capital investments in new mining farms and the latest equipment, as well as investments in the accompanying structure of generation, accumulation and consumption of AI-controlled green energy, are needed to expand the possibilities of mining diversification and obtain stable profits.
ARCHITECTURE DEVELOPMENT STAGE JULY-AUGUST 2022	Creating an ideologically advanced system for the production, storage and distribution of energy for AI-controlled mining requires, first of all, adapting our existing solution to the capabilities of third-party manufacturers of component equipment - solar panels, wind turbines, inverters, secondary energy sources, and so on. The consciousness of a new, fully scalable energy management system that would make it possible to do without obtaining energy from outside and avoid additional costs, while increasing the efficiency of mining, is the primary task that will be solved when creating new mining farms equipped with the latest computing power, both based on ASICs of various protocols and GPU rigs.
SMART PORTFOLIO COMPILATION SEPTEMBER-OCTOBER 2022	It's no secret that excessive power consumption is a major headache in mining. This is especially true for already outdated or simply worn out equipment, which is still used in most mining projects, including cloud mining projects. The creation of new mining farms based on the principles of independent energy consumption under the control of AI, will allow to offer the developed solution to other commercial structures involved in mining, which will be another source of profit for the project as a whole.
ASTL 2ND PHASE PRESALE START NOVEMBER 2022	Expansion of project financing is one of its important components. Since we assume an almost exponential growth in capacities in which funds will be invested, such an approach will allow the ASTL project to be profitable regardless of the situation in the cryptocurrency market, the economic situation and the political situation.

AI Mining based Profit

Profitable Investment with Confidence

ACCESS TO THE INTERMEDIATE POS MINING CAPACITIES

DECEMBER 2022

The project is not alive by mining alone. Invested funds are invested both in somewhat obsolete PoW protocols and in mining and staking on PoS-based algorithms. Due to the general increase in the number of devices of the PoW and PoS algorithms, there will be a need to move from general distributed pools like Binance to their own mining pools, already under the control of AI.

CREATE AN OWN POS POOL

JANUARY-FEBRUARY 2023

In connection with the upcoming transition from PoW to PoS for practically the main mining coin - Ethereum, there is a need to create the most powerful possible own pool of coins, allowing, after the transition, to count on making a profit already through staking in the Ethereum 2.0 blockchain, without canceling proper diversified mining on other blockchain protocols.

Project Team

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AI Mining based Profit

CONCLUSION

Even when ordinary mining does not make a profit due to the fall in the rate of the mined cryptocurrency, our investors look confidently into the future and receive guaranteed profits

LITERATURE

1. «Powered by blockchain: Realizing AI's full potential» by David Treat, Alissa Worley and Justin Herzig, Oct 2018. Available there