The WITHCoin White Paper
[WTHC]

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WITHCoin is virtual code coin with evolved itself.
The profit of With Coin as transaction, transfer commission will be used for the construction of world welfare society.

[Summary]
WITHCoin Platform is able to use in actual life with the lightest Block Chain and the transmission speed less than 1 second.
And it is a code coin which produce the WITHCoin that they can mine with the lowest price over the existing GPU mining method which spend lots of electricity, evolved itself over the central type.
Block Chain of WITHCoin supplement for the existing Block Chain of Bit-Coin, and modify, is operated with the lightest and small Block.
And it has the most transmission speed among the virtual coins, is possible to use in actual life.
WITHCoin supply the electronic wallet which supports diverse equipment.
Any operation system all over the world as Smart Phone, PC(Windows, Mac, Linux, Unix) can use WITHCoin Wallet.
The future operation system also can use WITHCoin Wallet.
WITHCoin is unique virtual coin only for CPU mining which it develop and make a recoding more the stable X13 Algorithm and recoding.

(1) With Contracts?
It means the contract to be implemented stably based on Protocol Layer called Block Chain.
Lots of virtual coin as Bit-Coin, Ethereum etc. cannot use in actual life due to slow speed.
WITHCoin that utilize the light and most fast Block Chain which can use in actual life.

(2) What is the coin?
Is it called the coin unless cannot use in actual life?
Which kind of necessary condition does the coin have if it is used in actual life?
First, the security of trust from the risks as hacking and counterfeit.
Second, the fast transfer (settlement) speed.
Third, the stability of the property conservation.
Fourth, are there member stores for the user?

WITHCoin apply the multi-sig security that it can keep the coin stably with above four kinds condition, it is able to use at member store and it is impossible to do hacking and counterfeit, and transfer speed less than 1 second, and own wallet.

(3) Public opening of technology?
Our technical team open WITHCoin Blockchain and all source code, lead the development of virtual coin, will contribute to the prosperity of With Coin and virtual coin all over the world through the supply of diverse API (Application Programming Interface) with free for the developers.

(4) Mining equipment
Recently Bit-Coin mining equipment over the world has around 310,000 tera, spend the electricity around 7,440MW per day. In other words, it is almost capacity of 3 places with large scale thermoelectric power plant in correspondence with around 1 billion USD.
Therefore it is not only tremendous loss but also occur severe environmental pollution (CO2 gas and other environmental pollutant) , that is equivalent to construct the 3 places of large scale thermoelectric power plant additionally in order to operate Bit-Coin Block Chain.
The production 1Kw of electricity by thermoelectric power plant occur CO2 gas 991g, eventually occur CO2 gas 7,373,040Kg per day for Bit-Coin Block Chain. It means to threaten our health due to pollution of the earth.
Further the expense of the electricity production 1Kw is 35.7 Won by coal and is 86.8 Won by natural gas.
That is to be used 265,600USD~645,800USD per day for the operation of Bit-Coin Block Chain all over the world.
Ethereum also is almost equal. Recently Ethereum is operating 820,000ea the graphic card GPU(Graphic Processing Unit) for the mining in the world, and spend the electricity around 180MW for them.
The reasons above these results are caused in Hashing Algorithm problem, increasing of the degree of difficulty, half-life period.

(5) WITHCoin Block Chain?

WITHCoin face facts as above problems, was created by research and development of mining method and new Hashing Algorithm in order to solve the above problems.

It was designed to be able to mine though it doesn't use huge Computing Power for the mining of lots of Coin, and is operating.

It is virtual coin of new concept which can change the flow of virtual coin with the protection of environmental pollution.

WITHCoin is steadfast to its position as a good coin for the world and it is best virtual coin which is able to develop the various kind programs based on personal internet and With Coin, all With Coin are mined only CPU method not GPU or mixed method against severe competition.

1. Introduction

A. Background

Block Chain conceptualized first in the thesis of Satoshi Nakamoto, 2008 year: "Bit-Coin: A Peer-to-Peer Electronic Cash System", was realized the core technology next year.

(1) Bit-Coin uses the technology of Block Chain as financial transaction ledger which individuals record the infor mation of coin transfer with opening to the public.

Bit-Coin is first case to use Block Chain in order to solve the double payment.

Even though Bit-Coin has no manager of the central control it supported P2P (peer-to-peer) transaction around 2 ,000,000 cases successfully, nowadays achieved the amount over 60 billion USD.

Lots of system which utilize Block Chain appeared soon after the success of Bit-Coin.

Recently several hundred virtual coins are competitive, banks over 90% invest to the technology of Block Chain.

(2) Coin transaction is most universal applied program, but beside this various group show the attempt of management using the technology of Block Chain for other digital property as financial commodity and service, transportation information, the ownership of property, identity information etc.

In 2016 year, code coin Ethereum became the center of public interest.

Etherium is Blockchain which contains Turing-completion programming language that can be used for the production of contract which is able to use for the functional embodiment of optional state transformation, the target of it is to supply Smart Contracts to Blockchain.

The target is that the user can use all kinds of program (or contracts) to Block Chain.

As Bit-Coin, Etherium remove the counterfeit contract from Block Chain if malicious Node try to counterfeit the contracts using the mechanism with Block Chain.

Bit-Coin secures the quantities of transmitted Bit-Coin completely between accounts.

As like similar this, Ethereum also shall secure the flawlessness of executed the contracts.

Smart Contracts has potential energy which can be changed over the paradigm of central application development.

Even though the program doesn't exist in the central server, it can execute the same Logic anywhere.

Smart Contracts can be used in the projects as Golem which is purposed for development over the central market, the platform of currency transaction, over the central Global Supercomputer.

But there are several severe problems in freedom and flexibility which is supplied by the Turing-complete language based on Ethereum.

We suppose it is incongruence to use in the framing of Smart Contracts due because Turing-complete language is impossible to decide basically.

Due to this impossible problem of decision, nobody can know how will be operated before the execution of Smart Contracts based on Turing-complete language.

Ethereum tried to overcome this problem with applied the cost about calculation work.

But this problem which contains in the language itself to be used in execution and development of Smart Contracts occur a series of the weak-point naturally, and it was caused to failure of the project as The Dao.

B. Proposal

The target of WITHCoin is to develop the Platform which can be used in the actual life as a real coin through the supplement of existing virtual coin weak points, and the succession of strong point.

Over the central system is a lack of systematized decision-making process.

There are some cases to happened several troubles as leading to confusion, and causing a lot of loss financially due to lack of decision-making process in the world of code coin.

WITHCoin select the method that the exclusive mining equipment and the server of whole world take part in authentication in order to improve Software and whole ecological system.

WITHCoin fixed lots of the public budget which can be used for the development of whole WITHCoin ecology through these proposals.

The code coin as Bit-Coin which use only the consent Protocol of the pattern of consent Algorithm POW of the protection of centralization has a difficulty because it doesn't separate economic Incentive and political Incentive.

In order to solve this problem, it will be led the stable consent to flow into POW tens of millions of whole server of the world.

Through the purchase of lots of mining equipment the user raises the control power (political side) against Block Chain, and can increase the mining income (economical side) at the same time.

WITHCoin overcome this problem using the consent mechanism which separates the economic Incentive and political Incentive. (it will be explained in detail to below)

In order to get the political power and economic resources, it should invest for the system.

The user can increase the votes cast as increasing the number of Node, and maximize the mining income as investing the compensation of deposit money and the creation of Block (it means the provided compensation according to the quantity of tied Coin in Node).

Additionally, the used mutual consent Protocol in here is higher and faster in the efficiency of energy.

In case lots of Application ecology, over the central coin has a tendency to be a hotbed of speculation due to limited the actual place of using.

Everyone think the value of coin is connected to the fact how the coin make the best use of essentially,

With Coin Team is going to introduce the various Application which uses With Coin into the market and make a strategic agreement.

2. The comparison of Cryptocurrency

A. Outline

WITHCoin would like to use the powerful technology of POW.

This ADML (Architecture Description Markup Language) is designed to maintain the decision possibility which can supply the safe and exact execution of the contracts with extending the expressiveness.

It is created with **X13+**as developing this based on stable Algorithm X13 which is made on WITHCoin Blockchain

B. Background

There are two kinds of approaching method in developing the contracts of Blockchain.

One is to use the flexible Programming Language on the Virtual Machine, the other one is to use the Domain-specific language that has the decision possibility but a bit less flexible.

WITHCoin Team chose the second method.

Compare with the code coin based on Virtual Machine, inference engine can make an inference the information from Code before executing Code due to base on Semantic web technology.

The contracts have the decision possibility, and the result of contracts is verified undoubtedly.

It is an innovative concept which has the contract technical skill to establish safe and sustainable coin.

Ethereum applied to the price for the complication in order to solve this problem using the market mechanism, but WITHCoin believes the approach of more strict OWL and TAL method supply more safe environment to develop the contracts of basis on Blockchain.

C. Development

When the technology as JSP, PHP, HTML, HTTP, HTTPS, RDF, OWL develop based on the standard Web technology, it can be extend to joint ownership the information with the method which can be interpreted.

Both of OWL and RDF can be used in drawing up the classification system of not obscure structural data.

We proposed the concept of With Contracts connected with all of payment system using this peculiarity.

OWL and RDF show the similar peculiarity, but recently the standard of RDF doesn't support the perfection of P-Time.

The standard of OWL ensures the perfection of P-Time using reasonless as a tool which is inferred the logical result in the indicated fact before or the set of axiom.

This means to be able to decide previously the time to take the execution of the contract.

This peculiarity is the core of reason why choose OWL as basic language of With Contracts

OWL DL (Description Logic) is low position of OWL, is designed to supply the maximum expressiveness with keeping the perfection of calculation as possible.

OWL DL operates on the dictionary of abundant vocabulary and the classification system with defined in the dictionary as ISO20022.

The particular skill of With Coin as transaction doesn't supply from OWL dictionary, so the vocabulary and the classification system related with this should be called from the outside of contracts.

In order to solve this problem, we propose the method which creates the Namespace domain defined in the dictionary on the Blockchain.

This Namespace Domain can call non-standard basic type (classification system) in the contracts.

In order to maintain the decision possibility and the complicate skill of taxonomy, non-standard basic type will be added carefully.

The other problem of Turing-Perfection Contracts regarding Block Chain, non-specialist is difficult to read the Turing-Perfection Contracts.

If Code is the law, Code should be understood with related everyone.

The Code that uses Turing-Perfection Contracts for the contract can be inspected only by the people who can read.

3. Consensus Algorithm

A. Outline

Consensus Algorithm is the core of the coin of Blockchain base or System.

Algorithm makes efforts to give the answer against the question how all divergence Data Base can be approved to possess the same information set.

WITHCoin decided to use the modified FBA(mFBA) Consensus Algorithm based on Consensus Protocol (FBA) of Stellar regarding this question.

Consensus Algorithm comparison

Mazieres defines the core skill of FBA Protocol as follows:

○ Everyone can make a consent to participate without permission of over the central control and the central manager.

○ Low waiting time, Node can be reached to consent actually during waiting time (ex: maximum few second) for the Web or the transaction of payment.

○ Flexible trust, the user can choose the reasonable set freely.
For example, even non-profit group can play an important role in maintaining the trust to more large scale parties.

○ Asymptotic security rely on the electronic signature and Hash family, these variable can control practically to protect from the adversaries with abundant computing power.

○ The skill of decision making, voting skill related to the vote and operation of parliament is included in Protocol as additional skill.

B. Federate Byzantine Agreement Consensus Algorithm

About Consensus mechanism of Bit-Coin and the Protocol of traditional Byzantine base, all network participants should agree unanimously.

But FBA doesn't ask to consent unanimously to all participants, and additionally each Node can choose which Node they can trust.

It makes to be more faster transaction and make the systematic growth, doesn't lose the faultlessness of network.

FBA constructed the mechanism to be able to consent without unanimity as organizing the group with team (it is called Quorum) by Nodes.

When the transaction is there, it transmits the information to all people in the group.

Instead of all networks are waiting to consent to the state of data, relevant Node suppose the information is right in case of listening enough lots of same messages from the trustful Node.

When it is happened overlapping Node or loose Node combination, it is made each other Node to have each other team to consent about same transaction.

This leads to consent the whole system about each Transaction Block without the agreement of unanimity.

C. Consensus Algorithm through the server of whole world

WITHCoin is possible to mine only CPU method, the server of whole world will be participated in mining of WITHCoin naturally.

Sever is operated for 24 hours and 365 days, the load of CPU is less than 20%, therefore, the loss is almost 80%.

The owner of Sever is going to announce the mining program of exclusive use for Server in order to participate in mining WITHCoin naturally for the 80% loss.

The mining program for Server will be announced with Window NT Firm, and Linux and Unix Firm, they will make anybody can do Download easily in Homepage.

Also, The Server is the safety first, therefore they will make anybody can use with safety opening the Source.

The Server is widely distributed all over the world, With Coin block basically against the system of the Hacking, the counterfeit because it concentrates to one country as Bit-Coin.

4. Issue of coin

● Initial Development Budget: Initial Development Budget is for the distribution before Genesis Block, and is to support for the completion of software development.

  This coin is composed by the selling ICO and Bounty.

  WITHCoin of 188,800,000 are issued with Genesis Block together.

  They are 1o% of 1,888,000,000 coins.

● Confirmation Reward: Confirmation Reward is the compensation of money to pay to Node at random for the issued block (every 600 seconds).

  According to the distribution of compensation at random, when the number of Node increase, the probability of compensation of one Node decrease.

● Coins Generated Per day: The issued Block every **60second issue 300coins**, the mined coin per I day is Max.43,200 coins.

● Transitioning from PoW (Proof of Work) to PoS(Proof of Stake) on 01/Feb/2020
  Window WITHCoin Digital Wallet Switch to Staking Mining

● Elim Blockchain R&D Center spent three years introducing technology around the world, allowing people all over the world to use Free Mining for their own use.

  In recognition of his contribution to scalability as a public Cryptocurrency, he will be able to do so in the future.

  To be with the main character of "Wealth Movement," stop Mining as of 31/DEC/2019.

  Transitioning to PoS (Proof of Stake) format for the duration of contribution. (hold)

  Benefit is paid for 50 years at a dividend rate of 0.34%/year in accordance with .

● WITHCoin Block Generation Cycle: 60 seconds (1 minute)

  Block generation cycle: 60 seconds (1minute)

  Pop of Work (PoW) is a P2P-connected network that is a feature of Public Crpyocurency.

  It is exposed to the dangers of hacking because it is accessible to anyone while it is open to participation.

  Recently, using the hash value, adjust the function of the Timestamp in the Mining Pool.

  Time is attempted to hack and unilaterally extort Coin from the generated block.

  The WITH International Foundation R&D Center shortens the Timestamp to 60 seconds, and the Level of Difficulty Update of from 20 to 26 to increase the hash value of Mining to address the risk.

Date of initial issue	08/SEP/2017
Total issue limit	1,888,000,000 WTHC [Mining for POW 104 years] Mining Supply : 43,200 WTHC/day [2020.01.01. 50Years of DPOS Switching]
Block generation cycle	60sec
Block Size	1b
Agreement Protocol	Pure PoW (Proof of Work) : Successful development of PoW transition to PoS
Development Language	X13+ Algorithm
Cryptographic Algorithm	OWL, RDF
Foundation (Corporate) Name	WITH International Foundation
Foundation Area	L.A, California, USA
Leading figure	Charisan
Development Objectives	POW's weak point R&D and its function as an international currency.
Core Value	Hashrate1s Value Increase as a Payment and Global Cryptocurgency Remittance and Extensions of Remittance through Platforms
Related Homepage	http://withcoin.biz
Blockchain information	http://block.withcoin.biz:3001/
White Paper	http://withcoin.biz/19.06.19%20The%20With%20Coin%20White%20Paper(EN).pdf
Supplementary Explanation	Ming Blockchain [Public Coin] PoW in 104 years based on total issue ; The first successful research and development of a system that automatically distributes mining coins to the holders of the WITHCoin[WTHC] by converting the Cryptocurgency to PoS from 01/Feb/2020 Completed development of automatic refund system program of merchant Cryptocurgency. Development of Value Conservation System Program SWAP TOCKEN (under patent) Development of Cryptocurgency overseas remittance drawing platform (under patent) WITHCoin4.7.6 Update Completed (2019.06.15.) –Increase Security Leader in the development of Cryptocurgency Wallets. WITHCoin4.7.7 Update Completed (2020.02.01.)

5. Conclusion

With Coin Team has a target to overcome the problems of technology and operation contained in various code coin.

The system and issue plan of POW has a target to createthe value of Coin with controlling the centralization of power.

X13+ Algorithm make the fast Transaction with high energy efficiency.

The Chain Block of With Coin will supply the light and most fast Framework with the decision possibility and the approach possibility to create and execute the contracts as above explained.

With Coin Team has a target to achieve the purpose as above with applying the security and the faultlessness which can obtain through the technology of Block Chain.

With Coin will be the coin to be able to use in actual life with solving the problems as follows.

1. Light Block Chain

2. Fast transaction speed (less than 1 second)

3. Mining of CPU method: development of X13 Algorithm Coding X13+

4. Establishment of member store and the use in actual life: Automatic advertising program

5. The role of technology leader all over the world for the virtual coin with opening of the leading technology.

○ **Homepage-**

   http://withcoin.biz/
   http://withcoin.co.kr/

○ **WITHCoin Wallet Patch for Windows**
   PC Windows Only (WITHCoin 4.7.7)
   http://withcoin.co.kr/bbs/board.php?bo_table=13

○ **WITHCOIN BLOCK Explorer**
   http://block.withcoin.biz:3001/

○ **GitHub-**

   https://github.com/search?q=WTHC

White Paper

WITH International Foundation