

White Paper 1.0

Email: eap@eosauctionplatform

Telegram: https://t.me/EOSAuctionplatform Twitter: https://twitter.com/eosauction

Github: https://github.com/eosauctionplatform/eap

# Index

- 1 Notice
- 2 Introduction
  - 2.1 Fine art & Wine Auction Market
  - 2.2 Issues in the auction market
  - 2.3 A Mission of EAP(EOS Auction Platform) team
- 3 About the BlockChain
  - 3.1 Growth of Block Chain and Cryptocurrency
  - 3.2 What is a BlockChain?
  - 3.3 What is a Smart Contract?
  - 3.4 Dapp (Decentralized Application)
  - 3.5 Ethereum vs EOS
- 4. A story of developing EOS AUCTION PLATFORM
  - 4.1 A plan for development
  - 4.2 A Platform structure
  - 4.3 An EAP of smart contract and Workflow
    - 4.3.1 On occurring an auction
    - 4.3.2 Auction bid
  - 4.4 Issue an EAP Token
- 5. Roadmap
- 6. Team
- 7 Token Distribution
  - 7.1 Outline
  - 7.2 Token allocation
  - 7.3 Fund management plan
- 8. References

## 1 Notice

This document is intended only to explain the business model, business structure and development plan of the EAP team's platform(EOS AUCTION PLATFORM). Herein, nothing contents should be construed as a guarantee of future work by the EAP Team. The EAP team has the right to determine the platform's business model, business creation and operational direction in accordance with the requirements of the relevant industry regulations required for business success.

The price of coins (tokens) based on blockchaining can be highly volatile, and the platform is not responsible for any loss that the user may experience due to price fluctuations in coins (tokens) quotations. When using the platform and performing blockchain coin(token) transactions, the user must evaluate the risk and perform transactions only within the acceptable range.

The platform provides only third-party transaction matching services. While both parties to the transaction are users of the platform, the platform provider itself does not participate in any transactions. The user has ownership of the blockchain coin(token) used on the platform, and platform provider, agency, and company do not have any ownership.

An EAP token (EAP) issued by an EAP team(EOS AUCTION PLATFORM) is not a platform ownership or any type of marketable securities. The EAP platform does not guarantee market value.

It has been almost 10 years since the first block of cryptocurrency, Bitcoin, was called the beginning of blockchain technology. Numerous projects have started, where a large number cryptocurrency (Coin / Token) have been issued and converted to block-chain technology around the world. However, we have been debating and debating among scholars who admit cryptocurrency in the economic field and many scholars and businessmen, politicians and technical experts who claim to be fake. Blockchain-related technologies are evolving because of the time and effort of many developers and technical experts. Five years later, the future of the block chain technology is expected to grow horrifically, and our team(EOS AUCTION PLATFORM) is also trying to make a small contribution.

In March of 2017, I heard that the possibility of the development of cryptographic currency will outdo the existing currency from Hong Kong's acquaintances. Since then I have been interested in cryptocurrency and have started to study cryptocurrency with a small investment. I have been motivated to develop an auction platform based on block chain thinking about the industry that can be applied while studying the block chain technology. Currently, the global auction market has grown rapidly in the online / offline market due to the advancement of IT(information technology), and By participating in the auction anytime and anywhere in a world where you can easily bid on the products you want. One of our team members had experience in wine auctions and started to research and investigate the project. We do not want to point out that the prices that are determined in every auction are bad. Everyone in the market knows that all market goods prices are determined by the laws of supply and demand, and that price increases and reductions occur. Our team will develop an auction platform based on block chain, so that anyone who participates in the auction will be able to easily access the auction price and data auctions to help a little bit in the development of the auction market.

#### 2.1 Fine art & Wine Auction Market

The global art market is trading at \$ 45billion dollars in 2016, of which \$ 16.9billion or 40.5% is traded on the auction market. Among them, the Asian market accounted for 40.5% of the total. This is the largest in the world. In addition, nearly 90% of all Asian markets are traded in the Greater China region. Of these, online auctions accounted for \$ 3.27 billion dollars, Particularly in its trend is steadily increasing mainly in affordable art market.

Recently, the size of the wine auction market has reached \$ 345.88million dollars worldwide by 2015. Of which \$ 28.41million dollars is traded through Hong Kong. Also, \$ 45.83million dollars of global trading volume is being traded over the Internet. As with wine auctions, transactions over the Internet are steadily increasing. Our team will provide services starting from the Internet auction market and Asia including Hong Kong, and will be gradually expanded to other auction sites in the future. The art and wine auction market is a simple example. Our goal is to introduce block chain systems to auctions in various fields such as automobiles, real estate, agricultural products and so on, so that EAP coins can be used.

### 2.2 Issues in the auction market

The auction market has existed from ancient times to deal with various items. There are many products that come to mind when people think "auction" such as art, wine, real estate, gold, automobile. In addition to the auction items mentioned above, there are a lot of products currently on auction market both offline and online, ranging from first to fourth industries such as agriculture / aquatic products, petroleum and renewable energy (RPS) used in real life.

Also various reasons why auctions are open to various and participate in the auction. Auctions are often used to participate in to purchase a limited quantity of goods, and to set prices for goods that are difficult to set prices or fluctuate in price. The definition of an auction is the process of selling the goods from any place to the bidder who offers the best purchase conditions.

In the market economy, we think that people who want to buy goods try to buy goods with the same conditions at a cheaper price, and sellers try to sell at a slightly higher price.

I would like to talk about the art auction market which is a representative of the auction market. The art auction market has been in full swing since the mid-1970s, and has continued to grow at an unprecedented rate in the history since 2000s. Nowadays, there is a phenomenon that the prices are updated each time in the situation where the artworks are traded as investment goods in a great china region. Auction intermediaries in the art market include galleries, auction companies, art consultants, art fairs, and performance / exhibition planners. It is because it is an economical product that has instrumental and exchangeable value, and it is impossible to measure objective value as a symbolic product. Most artwork is valued by professionals such as galleries, auction companies, and critics to determine the starting price of the auction. Some galleries and auction companies have problems in the price of art auctions because they only focus on maximizing the value of their artisans or their own art works in order to maximize economic profit through art auctions. They intentionally emphasize the artistic value of the artwork, while pursuing economic profits, raising the auction price. It is to show the double logic inherent in the gallery business. Most of the large galleries and auction companies' prices are not disclosed, although the tendency is to reveal recent prices through on-line art auctions.

#### 2.2 Issues in the auction market

There are a lot of large auction companies that do not disclose the history of auction when art auction is done. We may disclose pricing and auction winning information to a small number of members. There are also occasions in which an auction history is manipulated price due to the circumstances of releasing auction history and prices only to a small number of people. Commercial galleries Prices, unless a special case, a generally upward revision in principle. The concept that pricing is not merely an economic act but an act that gives symbolic meaning is the general atmosphere of the art market. For this reason, success in the art market is generally measured in terms of price rises. Falling prices can have a negative impact on the artist's self-esteem, but it can also be perceived as a negative experience. Rising price provides the collectors with psychological justification for the monetary expense they have paid and gives the galleries and collectors a symbolic meaning as a heroic role, as a proof of aesthetic discernment, as a market tastemaker. Because of this reason, big hands that are not visible in art auctions are moving and unconditional arts prices are rising.

Not all galleries and auction companies manipulate prices without disclosing them. Some companies that make profit as their top priority are adversely affecting the art auction market.

As mentioned before briefly, the biggest problem of all the auction markets is that as the size of the auctioneer grows, the economic power of the auctioneers has increased. As a result, the price of commodities has risen and commission fees have also increased, which has been a burden on the growth of the auction market.

**Closed Price** 

**Participation restriction** 

**High commission** 

**Issues of large corporations** 

## 2.3 A Mission of EAP(EOS Auction Platform) team

"Build auction history data using block chain technology and decentralize the auction market centered on intermediaries (an auctioneer) into a transparent and efficient market based on open data."

We live in the age of communication technology and data capitalism. In the auction market, there is already a platform that provides accurate data based on price data. The way to solve the problem of high cost and inefficiency in the auction market is in the data which is open to everyone. At this moment, various auctions are being held in real time all over the world. However, data generated from auctions value often disappears without being recognized. The data for individuals and small auction markets is difficult to estimate and is not being stored in the data. This is because a large amount of data must be gathered to ensure the fairness of the auction price. To solve this, we need a platform that can record small amounts of data and can be stored for a long time. At the same time, we want to build a platform for processing and analyzing present large-scale auctions and previous data.

We do not think EAP(EOS Auction Platform) is an innovation in the auction market. We do not think the technology of our team is the best. Auction platform should be developed according to the characteristics of each product regardless of small/medium/large scale arts/wine/automobile/ real estate/agricultural and marine products. We want to help the market grow by linking new participants and auctioneers through the auction market pricing, accumulated auction data, valid data, proven users, and data on our platform. The EAP team's fee is free or with a low fee of 0.002%, so anyone can easily participate in the platform and create a platform to create and participate in the auction. We are always welcome with auction companies from each sector, with the various cooperation and requests.

## 3 About the blockchain

## 3.1 Growth of Block Chain and Cryptocurrency

A bitcoin based on the block chain technology was developed and presented by a programmer who wrote the nickname Satoshi Nakamoto in October 2008. It is designed as a decentralized transaction book, Prove of Work (POW), and transaction unit control in the way of interpersonal P2P transaction. Over the past decade, many project teams and communities have developed and studied Altcoins with various features and performance improvements including Bitcoin, Etherium, Etherium Classic, Ripple, Light Coin and EOS and so on.

Thanks to the spread of Bitcoin's early technology, the billing function of cryptocurrency has begun to develop. Also included are functions that ensure the anonymity of the cryptocurrency and coins have been developed and used that include more accurate transactions and faster algorithmic techniques. Thanks to the development of smart contract technology many projects such as SNS, exchange, public data, and medical industry, which include payment methods in the cryptographic market, which is simply focused on payment methods, are also developing along with the cooperative research studies with the cryptographic project team.

As many people around the world are interested in cryptocurrency and use and invest more, it is called the second cryptographic growth period in 2017. Thousands of online platforms and exchanges have emerged worldwide to provide cryptographic trading services. With the advent of a number of trading platforms, the liquidity of the cryptocurrency has been increased, causing the transaction volume and the total market value to rise sharply. Based on this, the basis for further development of the cryptocurrency ecosystem has been established a foundation. Since the market has grown at a super-fast rate in the first year after the cryptocurrency, there has been a lot of investment in speculative capital and burying, and many problems have arisen. Regulations have been created in each country, but the EOS project, which successfully launched Mainnet in June 2018, continues to evolve while improving the problems of cryptocurrency due to the support and investment of many people. Many new projects have been created, and many investment and effort times are gathered, and new technologies are being developed and realized every day. In order to survive the global market competition, the overall market of cryptocurrency must be more specialized in the platform. Therefore, governments and legislatures in all countries need to re-establish a basis for platform regulation and cryptographic market standards.

# 3 About the blockchain

### 3.2 What is a blockchain?

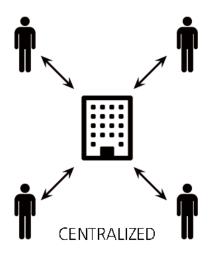
A blockchain is created based on peer-to-peer (P2P) data with small data blocks called data blocks. It is stored in a data block in a distributed fashion based on chain links. As a result, anyone can view the changed results, but it cannot be modified arbitrarily, and it is a technology that prevents forgery and falsification of data based on distributed computing technology. Fundamentally, this technology is a form of distributed data storage technology, and is a change list that records continuously changing data on all participating nodes, which is designed to prevent arbitrary manipulation by the operator of the distributed node. Most cryptographic currencies, including bit coins, are based on this form.

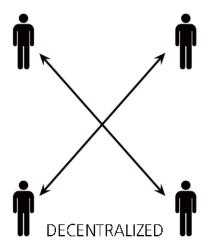
### 3.3 What is a Smart Contract?

In 2013, Vitalik Buterin expanded widely its ability to handle all types of contracts, including financial transactions, real estate contracts, notarization and financial transactions, which is financial transactions such as payment and transfer using block coin technology of Bitcoin. Nowadays, this technology uses a lot of token publishing for the ICO(Initial Coin Offering). Block Chain 2.0 is one of the leading technologies. Smart contracts, like traditional contracts, define all the obligations and potential penalties included in the contract, but the smart contract platform automatically and programmatically implements all these obligations and penalties. With these smart contract platforms, distributed applications can run on network by default.

# 3 About the blockchain

## 3.4 DAPP (Decentralized Application)





The DAPP(Decentralized APPlication) is the biggest feature of the blockchain. Until now, the currency system has been built with a centralized book entry system, so the transaction has to be left to a reliable institution, but these systems always have problems of excessive concentration of power and excessive over-profits. However, decentralization is achieved by the development of a block chain, and decentralization is achieved when the central institution is no longer necessary because it opens the book entirely to the public(to individuals). However, DAPP(Decentralized APPlication) is less likely to be exposed to this risk by the way information which is distributed, thanks to applications that use block chains.

If we explain it easily, it is easy to understand it as the idea of etherium = OS, DAPP = application. That is, DAPP(Decentralized APPlication) is a service that runs on the Etherium platform. There are now a lot of DAPPs built on the Etherium platform, and there are still many DAPPs being developed. Large companies are also participating in the Etherium platform, so A lot of high-quality DAPPs are being produced.

When searching for information on DAPP, there is a lot of saying etheric tokens. The Ethernet token is based on the Ethernet platform and is required to use for the DAPP service. At this time, the fee for transactions between tokens is paid by etherium. DAPP developers(or companies) may declare new DAPP development and distribute tokens to investors instead of receiving the investment, they can either distribute the token to the investors or allow the exchange to trade the token. That is, both DAPP and Etherium tokens are based on etherium. The more successful DAPPs, the more demand for DAPP and its DAPP tokens will increase, and ultimately the value of Etherium needed to use DAPP will increase.

### 3.5 Ethereum vs EOS

One of the key differences between EOS and Ethereum networks lies in the design philosophy of the network. An Ethereum network can be described as being application independent. As an essential part of the protocol, "Ethereum prevents it from using a very common high-level usage example." Ethereum has" no functionality ". This reduces the swelling between applications, but it requires a variety of applications to reuse code, and it can be efficient for application developers if more functionality is provided by the platform itself.

On the other hand, EOS requires the same functionality in many applications and provides features such as encryption and app communication tools that many applications require. EOS features characterize role-based permissions, Web toolkits for interface development, interfaces, self-describing database schemas, and the introduction of declarative authorization schemas. The features provided by EOS are optimized for managing and operating the platform.

The most important considerations for commercial platforms are scalability and efficiency. This is one of the key areas in EOS and Etherem. Currently, the Ethereum network is limited by the single-threaded performance of the CPU. Ethereum's initial test network transmitted 25 transactions per second under optimized conditions and has been increased to 50 or 100 tx / s through optimization latter. However, when running in a real application, the current transaction (transaction) of the Ethereum network is limited to less than 10 tx / s. Recently, Vitalik Buterin suggested roadmap for Sharding technology for "unlimited scalability" to improve network speed.

## 4.1 1 A plan for development

We are eager to the day when a number of users (companies) can easily create an auction page through the EAP Auction Platform (EAP), bids fast, makes a secure payment, and build up the auction data. Creating a Smart Contract, developing DAPP and launching an auction platform will require a lot of people, capital and time. Our team is planning to develop ① EAP Token payment system ② EAP auction DAPP development, EAP auction platform ③ Blockchain Big Data System analysis system development.



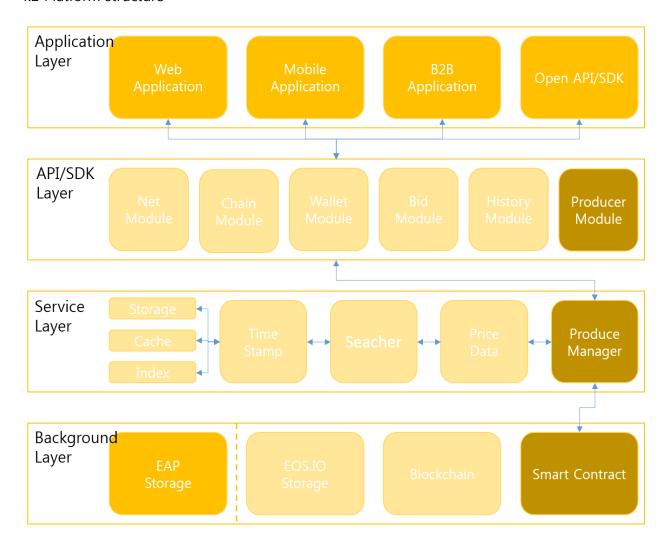




#### 4.2 Platform structure

The service objective of EAP is to provide decentralized project services to users and partners. All the auction records and user data from the initial stage of development and at the initial stage will be recorded in the block chain EOS IO and all the same data will be kept in the EAP's own storage and all data information will be disclosed to users. Ownership of all EAP data is in the community using the EAP platform. The EAP platform consists of Application Layer, API / SDK Layer, Service Layer and Backgroud Layer. The EAP platform was developed based on the architecture model provided by EOS.IO. According to the characteristics of the auction platform, the action-specific module (module) for short delay time, large-scale user and data transaction support, free service provision, it works independently of each other. Distributed module configurations are expected to provide a higher level of security, scalability and operational efficiency for the platform. elang/OTP, C/C++을 기반으로 개발 중에 있습니다. EAP is under development based on elang / OTP and C / C ++. As an open source the EAP platform will be released to Github once EAP 1.0 alpha development is complete. Our EAP team plans to provide Open API / SDK to auctioneers and partners for community expansion. Please feel free to contact us at eap@eosauctionplatform.com for any questions related to collaboration and development.

### 4.2 Platform structure



## 4.2.1 Service Layer

The platform's underlying logic is running on Service Layer. Running on Service Layer is connected to Smart Contract through P / M and is connected to API / SDK Layer. The Sevice Layer is used to store large amounts of data that cannot be recorded in the current block chain, such as image and video, in EOS.IO Storage and EAP Storage through IPFS. Currently, too many blocks are required to store large amounts of data, so we plan to decide to switch to EAP Storage or EOS.IO Storage depending on the direction of technology / operation through stabilization and upgrading of EOS main net launch. The auction data recorded by each user is recorded in the EOS based block chain with the structure defined in Smart Contract. Auction data is categorized by auction records, users, and auction sectors, and is recorded in the block chain as it is. As a result, data cannot be tampered with in the Smart Contour in the service layer, and all auction records are made public to the EAP community

## 4.2.2 API/SDK Layer

The API Layer is under development as a module type so that it can provide the API to the Front-End Application Layer along with the back-end role of the system. The data generated by the Application Layer and requests from the auctioneer / partner are collected and operated here. In the Application Layer, the auctioneer / user creates an auction page, and all the users who have EAP bid, bid on the auction, the price is determined, failure in bidding, successful bid. Requests are delivered and concatenated.



# 4. A story of developing EOS AUCTION PLATFORM

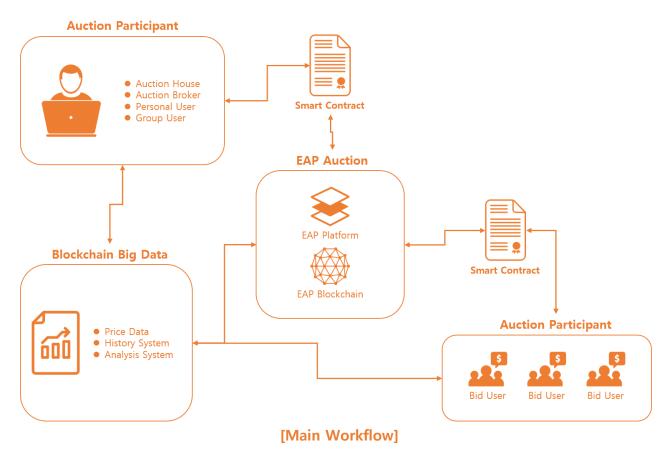
## 4.2.3 Application Layer

The Application Layer includes services for users and auctioneers dedicated to web / mobile / app / corporate - consoles. It is the gateway where block chain data of the EOS Auction Platform starts. The user and the auctioneer are connected to the block chain so that they can participate in the block chain community through a medium called an auction through a user interface that can be easily accessed by anyone.

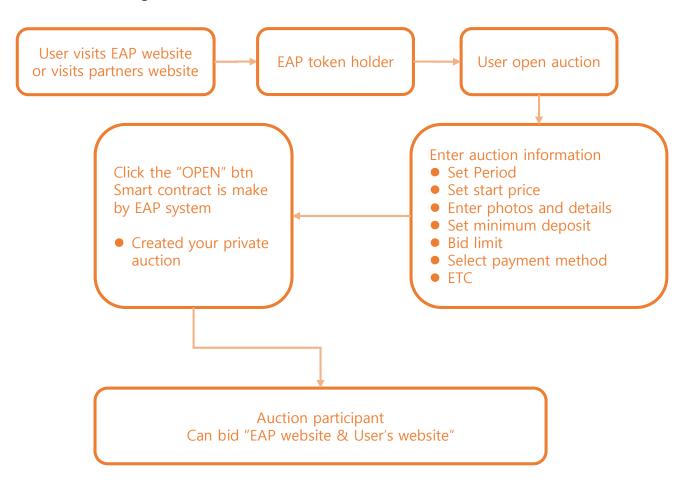
#### 4.3 An EAP of smart contract and Workflow

Smart Contract based on block chaining enables you to provide a fully functional auction solution that works with a decentralized trust and reputation system between users. The Smart Contour's detailed structure and functionality may change during development.

We draw a sample workflow to illustrate the simple auction creation and bidding methods.

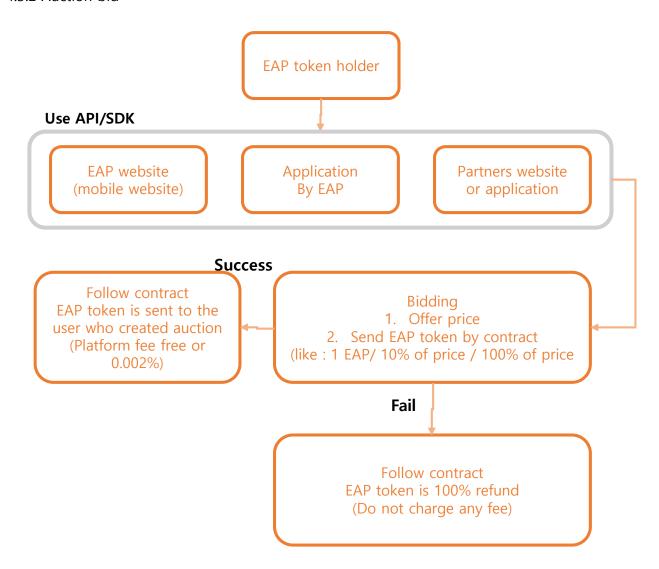


## 4.3.1 On occurring an auction



The above workflow example briefly explains how users who want to run an auction can open an auction. To create an auction page, you must have at least 1 EAP token to join. We are developing the method to disclose and manage the information of users [rating, user name, existing record, etc.] who conduct auctions to make a fair and safe auction platform.

#### 4.3.2 Auction bid



The above workflow example briefly explains how a user who wants to participate in an auction can bid on an auction. If you have an EAP token larger than EAP, you can participate in the auction from anywhere on the page linked to the EAP API / SDK. Detailed bidding methods may vary depending on the conditions of the user who opened the auction. There is no fee for users who bid. The basic principle is 0% commission. We will only charge 0.002% for traffic-intensive partners. In order to establish a safe and fair market, we will continue to make efforts for the safety of both the bidder and the auctioneer.

# 4. A story of developing EOS AUCTION PLATFORM

#### 4.4 Issue an EAP Token

The EAP Auction Platform (EAP) Token issued as the first step was issued with only ERC20 Standard basic functions. For the ICO(initial coin offering), transfers between wallets and transactions on exchanges are functional but excluded the ability to implement DAPP. Tokens based on Etherium will be used for ICO only. Although we can implement the Platform through Etherium, we decided to issue an EOS-based Token, which does not charge a fee to our users, because of the unstable transaction fee (gas). As a result, we do not think it will fit into the auction platform opening that our team has little to pursue. When the recently launched EOS mainnet stabilizes, it will issue an EOS-based token and exchange it with the Etherium ERC20-based token one-to-one.

# 5. Roadmap

All of the information in this document will be processed and developed over a period of about three years. All planning (development) can occur early or delayed. Development and EOS-based token issuance and main net launching, EAP Web / Wallet launching, EAP SDK distribution, and EOS Auction Platform launch. Finally, we will focus on providing users with better experience through partnership and joint development with numerous auction companies. Our EAP team is currently composed only in small groups. We have a strong teamwork with our experience working in the same company rather than being a hastily recruited team member. We started our challenge with passion for the future value and untapped field of Blockchain.



### 2017/Q4

- Market research
- Planning for Project



Basic development

## 2018/Q3

- EAP PreSale (Start : July/12 End : Oct/12)
- Initial Partnerships

### 2018/Q4

- EAP Token Sale
- EAP 0.1 Deployment(EOS Dapp SDK/API)

### 2019/Q1

- Exchange New EAP Token
- EAP 1.0 Alpha Release
- Open payment-based service for EAP
- listing on the exchange

#### 2019/Q4

- Release for Enterprise SDK/API
- Release for User APP/Web

#### 2020/Q2

- EAP 1.0 Beta Release
- Analysis/History System Release

#### 2020/Q4

Open EAP Mainnet





## 6. Team

### **David Moon**

Co-founder / Developer

He studied computer science and business. he participating in development using solidity, CC ++, elang/OTP technology. He worked for Datacenter team of D company in South Korea for 2 years. He has three of experience developing apps for smart phone applications. He has established a wine investment company to develop platforms related to wine market analysis and investment. He believe that the value of action is never giving up. He still working on development today.

## Jin-ho Park

Co-founder / Business

He studied business, worked for a social commerce company, and He was excellent at management and finance for the company.

human As being surprising return from various experience in cryptocurrency investment, we are still working hard on cryptocurrency. He is responsible for managing EAP teams with extensive market analysis and experience development.

## Young-su Kim

Co-founder / Developer

He studied political diplomacy. He started to the block chain two years ago, studied solidity, C/C ++ and engaged in the development of the company. He has a lot of experience with systems and platforms around E-commerce. He will developing with a passion and a positive mind that will not give up until the end.

## **Wanted**

We're recruiting a team.

- BlockChain Developer
- UI / Web Designer
- Online marketing

Please check the our website for more details.

Our EAP team currently consists of a small number of people. We have a strong teamwork by working for the same company as a member of team. The future value and passion of Blockchain set off a new challenge.

# 7 Token Distribution

#### 7.1 Outline

Token symbol: EAP

Token volume: 1,000,000,000

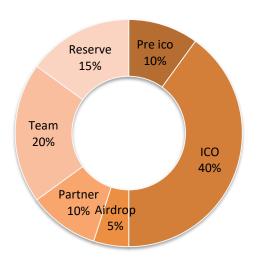
Related currency: ETH, EOS

### 7.2 Token allocation

50% of the total token issue is distributed to the general merchant through ICO. At this time, 10% is sold as Pre ICO, and for Pre ICO participants, an additional EAP amount of 20% of the investment amount is paid. 5% will be paid in the form of Air drop to EOS holders after ICO is over. 20% will be allocated to the EAP development team, and 10% will be distributed in the form of a deposit when the partnership is signed to enable EAP to be used successfully at the auction site. The remaining 15% will be used as a preliminary cost for EAP activation and business expansion in the future.

The above the sharing ratio may vary depending on the amount of money raised.

## **EAP Token Distribution**



## 7.3 Fund management plan

### Development 40%

Used for EOS-based EAP coin and block chain technology development and research and application development.

## Marking 20%

It will be paid for promoting EAP coins and for collaborations and events with auction market. For the popularization of EAP coins, marketing is an important activity that will be paid to expand the base of EAP coins.

### Operating expenses 20%

It is the money that will be used to operate the EAP coin team. We plan to run a team to expand EAP platform customer service and business expansion.

## Legal consultation 10%

Currently, ICO and cryptocurrency related laws vary from country to country and this is a very sensitive issue. The EAP team will do its best to ensure that there are no problems with the business of each country through legal consultation.

### Reverve fund 10%

This reserve is prepared for unexpected issues. The distribution rate can be adjusted according to the amount of the ICO fundraising and will be announced through homepage and community when necessary.

# **Use of Proceeds**



# 8. References

https://ko.wikipedia.org/wiki/%EB%B8%94%EB%A1%9D%EC%B2%B4%EC%9D%B8

https://ko.wikipedia.org/wiki/%EB%B8%94%EB%A1%9D%EC%B2%B4%EC%9D%B8

https://ko.wikipedia.org/wiki/%EC%8A%A4%EB%A7%88%ED%8A%B8\_%EA%B3%84%EC%95%BD

https://steemkr.com/kr/@loum/eos-vs-ethereum

https://github.com/ethereum/wiki/wiki/Design-Rationale

https://github.com/EOSIO/Documentation/blob/master/ko-KR/TechnicalWhitePaper.md

https://www.ventascorp.com/news/?mod=document&uid=26

http://erlang.org/doc/system\_architecture\_intro/sys\_arch\_intro.html

https://www.ics.uci.edu/~fielding/pubs/dissertation/rest\_arch\_style.htm

https://steemkr.com/eos/@eosio/eos-io-storage-white-paper-now-available

https://medium.com/@bensig/letter-to-eos-block-producer-candidates-184ef59a0748

http://1uyxqn3lzdsa2ytyzj1asxmmmpt.wpengine.netdna-cdn.com/wp-content/uploads/2017/03/TEFAF-Art-Market-Report-20173.pdf