

THE CREDIT INFORMATION ECOSYSTEM

ASTER COIN IS DESIGNED TO ESTABLISH A WIN-WIN ECO SYSTEM THAT CAN COEXIST WITH INFORMATION PROVIDERS WHO ARE MEMBERS OF THE CREDIT INFORMATION ECOSYSTEM, AND INFORMATION BUYERS SUCH AS FINANCIAL INSTITUTIONS OR BUSINESSES THAT NEED CREDIT ASSESSMENT INFORMATION.

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ASTER COIN ECOSYSTEM SUMMARY

Since the financial crisis, immense amount of money has been released, but many people are not receiving loans. This is because the existing credit scoring system relies on individual's past records.

ASTER credit scoring system analyzes the present and future status of the borrower by analyzing current data (social data), rather than using past existing data.

ASTER allows loans to be possible to those who could not make a loan, and can predict future financial risks. At the same time, data protection and compensation followed by data provision by the borrower may raise as an issue.

As a solution to this problem, ASTER evaluation system introduced block chain technology. Data protection uses the block chain technology, and pays ASTER Coin in return for the use of the personal information.

1. PROBLEM

I don't want equality between eagles and sparrows, equality between hummingbirds and bats, equality of birds of different sizes in the same cage, and equality of birds of different eyes in the same light.

Victor Hugo

Despite the development of capitalism, capital is still scarce for those who need it, and even if the system for loans is available, it requires very personal information under the pretext of loan screening. Looking into the recent lending practices, this is all the more noticeable. We often refer to it as 'the rich get richer, the poor get poorer'. Also, as Victor Hugo said, inequality, a trait of capitalism, is the reality that everyone hates but cannot avoid.

(1) THE REALITY OF THE LOAN MARKET

: THE RICH GET RICHER, THE POOR GET POORER.

Let's take a look into the market through the on-going interest rates in Korea. According to an official report on interest rate comparison by the Federation of Korean Banks in 2018, the average interest rate on credit loans at KB Kookmin Bank fell by 0.34 percentage points from 4.22 percent in January 2017 to 3.88 percent in January 2018. Analysis suggests that this is because interest rates given to the loaner of high credit have dropped significantly, despite the rise of the interest rates in market. On the other hand, the interest rates to the low-income bracket of the 5th to 6th grade rose 1.22 percentage points from 5.26 percent to 6.48 percent, 1.09 percentage points from 8.84 to 9.93 to those of 7th, 8th grade during the same period. It is analyzed that higher interest rates are applied to those with low credit

ratings who need loans, while lower interest rates to those with high credit ratings who have relatively more leeway, which means benefit transfer. This situation is actually related to the credit rating system, and the existing credit rating system has many loopholes of this kind. For example, under the existing credit rating system, people who are students or who do not have financial transactions for various reasons, such as not using credit cards, will receive a low credit rating of 7, 8, and 9, and they will be restricted from lending.

The cause of this gets evident when looking into loan screening principles

The existing financial sector is conducting a loan audit and execution based on the

credit rating system (CSS) using CB scores produced based on loan applicants' past

financial records at various credit rating agencies like Credit Bureau.

As mentioned above, existing CB scores utilize past financial transaction records of loan applicants (e.g., credit card usage performance, mobile service fee payment records, financial transaction past due records, etc.), which are based on the negative aspects of loan applicant's financial transaction information. However, the existing system does not reflect non–financial information that is enough to be considered as a credit assessment criteria for loan applicants. As uniform and standardized credit ratings are calculated, the borrowers in the blind spots out of the criteria are restricted from the opportunity to use financial services such as loans.

Therefore, tracking additional records needed to calculate credit rating becomes costly. In addition, without down-to-earth alternative to actively cope with the potential and unpredictable risk of financial asset credit assessment, it is possible enough to face with the second and third Lehman Brothers crisis.

2022.03 4

(2) PERSONAL INFORMATION PROVISION IN SOCIAL REALITY

: EXPOSURE TO RISKS AND DISTORTION OF COMPENSATION DISTRIBUTION (NO COMPENSATION FOR THE RISKS REGARDING PERSONAL INFORMATION LEAKAGE AND CONSENT TO PROVISION)

Let's look into the personal profile and social activities such as SNS as personal information, not limiting it to credit information alone.

Ironically, the development of big data industry has highlighted the risk of personal information exposure and the importance of protecting information. Despite the social problems caused by the numerous leaks and astronomical amount of money as social costs for protection from them, there is still no perfect solution for privacy.

This is supposed to be due to the existence of large number of unambiguous elements still in the process of personal information collection, storage and distribution, and the lack of social awareness to inform the information owner. Most individuals find it difficult to recognize when, where, how and how much the information is being circulated, and are informed of minimal notice in this regard. In addition, in cases that providing information is needed for other purposes, current practice is that information owners or holders are not given any compensation for information provision.

2. SOLUTION

ASTER Block Chain aims to establish a win-win system for all parties concerned with credit information. To this end, ASTER Block Chain also aims at the construction of rational transaction platform credible for every participant by strengthening and expanding value chain in personal information market derived from credit. In other words, ASTER Block Chain will return back the ownership and control of personal information to individuals who provide personal information, as well as profits from the provision of information.

First, let's look at the ASTER engine and then, the characteristics and algorithms of the ASTER Block Chain coin.

(1) ASTER ENGINE

ASTER is an alternative credit rating solution that evaluates customer credit ratings using various variables on SNS. ASTER calculates the credit rating based on at least 200 variables, while other existing credit rating systems do on 20 or some more. Correlation in the linear function can be easily figured out by its intuitiveness, however, for the very reason, its simplicity by simple intuition makes it hold less predictability. For example, it is simple and clear that, without money in your bank account, you will be credit—impaired. However, such analysis techniques are literally simple, which is likely to result in errors in calculating the correlation between credit rating and actual economic conditions. For example, in case of someone with no money whose parents are very rich, his overall financial situation is not to be taken into account. ASTER is a credit rating system developed to enable a more accurate interpretation by introducing elements that appear to be extraneous on the surface

but have a significant impact on the results as a nonlinear function. In other words, ASTER is developed as a 'nonlinear function prediction model' using social data that matches real financial condition by utilizing AI method called 'deep learning' and 'machine learning' techniques. The existing credit rating systems can screen out loan applicants with serious credit problems, but cannot properly identify high—quality applicants classified as 'Thin Filer'.

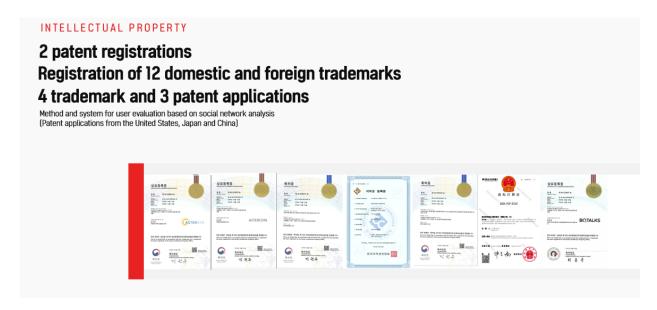
Below are the credit assessment standards of ASTER solution.

If a loan applicant's activities are active in social services operated by loan applicants (the users), positive contents are high in proportion, records on external activities are abundant, and also 'like' responses to his postings are plenty, he will receive good credit score in ASTER solution. While existing credit rating systems produce a number of people of the same class based on uniform criteria, ASTER solutions can re-evaluate existing credit ratings by applying a finely detailed social data analysis system, which is more accurate and accords with the substance. For example, 'Jest Finance', an evaluation system with program similar to ASTER solutions is known to have a 40 percent lower rate of default compared to the average for that of total U.S.



lending.

ASTER Engine also receives technical and legal protection through patents and trademarks such as 'social network analysis based user evaluation methods and system.'



ASTER Engine, which has been developed as Tenspace's solution, has been recognized for its technological prowess and selected as cool vendor for '2020 Gartner Al Banking and Investment Services' by global IT research company, Gartner. Gartner's cool vendors are selected through vendor briefing.

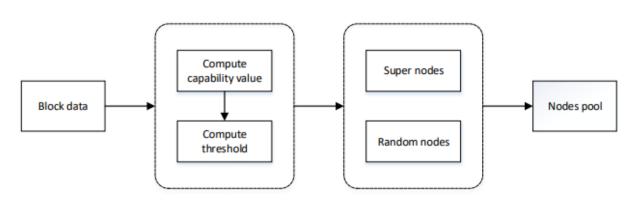


(2) ASTER BLOCK CHAIN COIN (ASTER COIN)

ASTER BLOCK CHAIN Coin is an ERC20 token based on Ethereum. ASTER Block Chain equipped with AI technology, is more efficient and performs better in speed and safety of node creation and network operation than Ethereum-based mainnet.

The transaction processing speed dropping on the mainnet is generally due to the lengthened overall chain followed by the increase of the number of nodes that make up the chain. Mainnet of current PoW and PoS method has disadvantages that speed drops and efficiency of mining decreases when chains get longer. In particular, when more miners are added, the efficiency decrease caused by the increase of chain lost limits increase of processing capacity. ASTER Block Chain is a type of DPoS mainnet. It creates separate chains by Al algorithm that calculates the transaction contribution to each node by its own criteria and classifies into Super Node, Non–Super Node, and then selects Super Node as the primary node. It is also very efficient in that it maintains speed and efficiency and keeps the overall mainnet identity by operating a separate chain composed only of representative nodes, which enables it neither to lose the characteristics of the entire mainframe nor to generate unnecessary or excessive transactions.

(3) ALGORITHM OF ASTER COIN



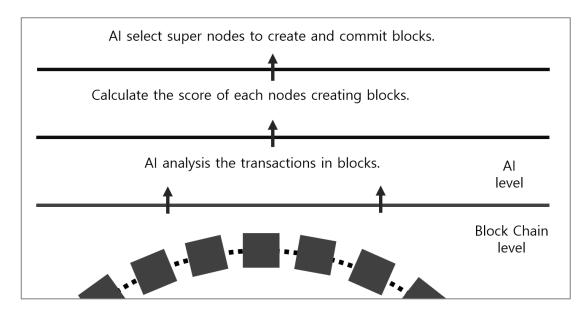
There are two ways to intelligently select blockchain, virtual money, and outputable nodes associated with Al as follows.

(1) Obtaining ATN (Average Transaction Number) value that each node has (or that can be calculated out) within the Convolution Neural Network (CNN) and (2) screening superior nodes and random nodes in an environment where a particular

Threshold value is set. The values that characterize each node are available as information variable values for Proof of Al.

ASTER Block Chain was developed with the goal of providing low level blockchain managed by AI, which means that operating a trading platform of Digital Asset Element by AI is possible and available.

[Low level structure]



In order to analyze each node and sort out the superior, the characteristics of nodes included in the ASTER Block Chain network must be collected.

The characteristics of the node to be extracted are three kinds in large. CRTs (the numeral value of computing power as characteristic value of corresponding node, time value of measuring online time period, and whether to be paid for transaction development), HCL (whether to be online or not at the moment as characteristic value of the network, how many nodes are connected, how long and frequent the network connection delay occurs), DAA (probability of discard, estimation, and present estimation of node as stability element) are they. Included in one set M, it is used as a variable to analyze the capabilities of nodes.

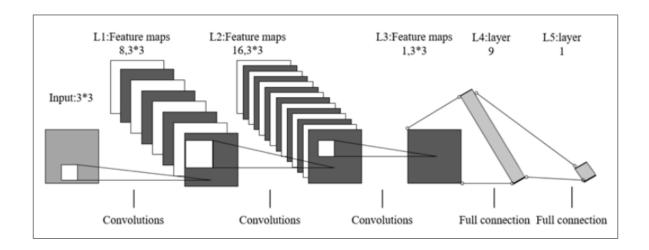
 $M = \{CRT, HCL, DAA\}$

 $CRT = \{computing power ratio, online time, payoff \}$

 $HCL = \{hop, connection number, latency\}$

DAA = {discarded probability, attracked probability, attract probability}

It is required that every experiment is conducted on AlexNet based on the theory of asymmetry by Alex Biryukov. (Alex Biryukov claims to build an asymmetric PoW based on the competitively difficult problems with the base of generalized birthday problem and the improved Wagner algorithm.)



(4) THE BLOCK DIAGRAM OF MODIFIED ALEXNET

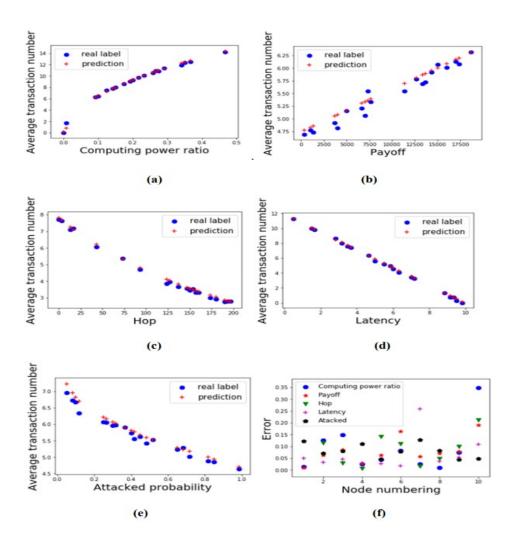
(CONVOLUTIONAL NEURAL NETWORK)

With five convergence layers, three connecting layers, 60,000 parameters, and 650,000 neurons, AlexNet implements a 1000 types of image classification. In the ReLu (Right Line Unit) method, which is an active function, pooling standardization plays a role in reducing the number of variables that need to be learned in the

network by processing nonlinear down sampling. Accordingly, CNN is carried out by utilizing variables optimized for each CNN model. This ASTER Al algorithm is designed to let AlexNet to predict the average number of transactions on each node, depending on the circumstances. Our Al model has five layers, including three CNN layers and two Full Connection layers. In order to avoid overfitting problems and improve the predictability, pooling of each convolution layer weight is done to the L2 standard. In the distributed network, state information of each node M is regarded as a dataset. State information belonging to the information set M of each node scattered in the entire network is utilized as a series of data sets. The i-th set M, a two-dimensional matrix, is utilized as input value of CNN. The average number of minable mining nodes is the effective level. After training the entire network with this algorithm, the average number of transactions of the i-th nodes can be obtained on inputting the i-th M value. The ASTER Block Chain network contains the previously mentioned three characteristic values (CRT, HCL, DAA), and based on these, analyzes nodes. With the information from the analyzed nodes, it sorts and classifies the superior nodes and non-superior nodes.

Sequence	computing	online time	payoff	hop	latency
number	power ratio				
1	0.12	1000 (s)	5k s·BTC	50	0.01 (s)
2	0.22	650 (s)	10k s·BTC	125	0.001 (s)
3	0.05	1200 (s)	2.5k s·BTC	90	0.001(s)

Sequence	connection	discarded	atracked	atract	average
number	number	probability	probabiity	probability	transaction
					number
1	0.2k	0.04	0.002	0	65.2
2	1k	0.03	0.001	0	125
3	0.9M	0.12	0.001	0.001	7.5



As described above, ASTER Block Chain can provide more diverse and sophisticated Al application services and data through selecting superior nodes by Al algorithm.

3. SCALE-UP: COIN ECONOMY

(1) COIN SALE

Term Summary

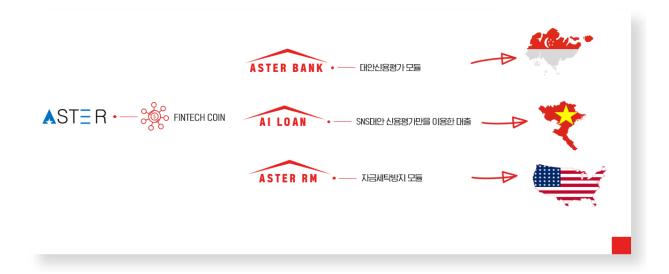
- Total coin: 1,000,000,000 AST

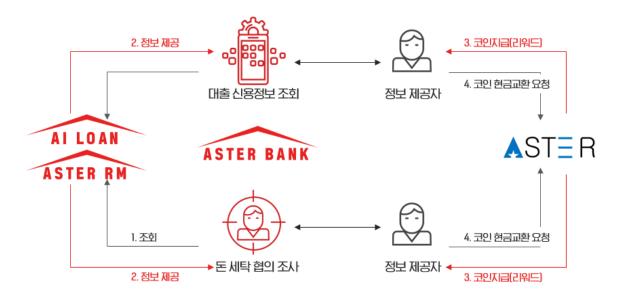
- Sale coin: 100,000,000 AST

- 1. Planning to distribute and manage coins in a market-friendly manner according to the lock-up policy and as company gets listed.
- 2. Distribution plan for ecosystem development: It is a project to construct an actual ecosystem (user, infrastructure construction) with a target period of 4 years.
- 3. Minimizing marketing, air drop, etc: Since steady and practical marketing is necessary to operate the loan platform, it has been decided to manage the supplies in vesting form.

(2) COIN ECONOMY

ASTER coin is a FinTech coin. With ASTER Engine, an alternative credit scoring module, the coin consists of two pillars, ASTER RM, an anti-money laundering module, and AI Loan, a loan service based only on an alternative SNS credit scoring module. The coin economy will be explained through these two attributes.





1) Al Loan money lending service

First, let's explain the coin economy with Al Loan. Al Loan is a general loan and consists of three stages, creating a membership, loan application and loan status. Here we pay compensation points to the first and second loan processes aiming as a marketing effect for ASTER coin.



Step 1. Al Loan registration

Once Al Loan account is created, compensation points are rewarded. Data provision has been compensated with the reward.



Step 2. Al Loan approval

If you get a loan through Al Loan, you receive points equivalent to 5% of the interest on the loan. For example, if a \$1000 loan has interest of \$200, the point you receive would be about \$10.

Rewards for creating an account is immediately exchangeable, and the points on the interest will be exchangeable once the payment of the interest is complete.

2) ASTER Coin collateral loan

A. ASTER Coin collateral loan product description

Let's assume Al Loan borrowers; users who received points, will be interested in the coin prices on the exchange. At this time, 'ASTER Coin collateral loan' is to be offered to the borrowers.

Prospective ASTER Coin collateral loanees would either possess large sums of coins or believe that the prices of the coins will increase. Users can buy coins with borrowed money from Al Loan and make ASTER Coin collateral loan again.

B. Risk factor for ASTER Coin collateral loan

The biggest risk for users with ASTER Coin collateral loan would be if the price of the coin collapsed.

The reason why this is unlikely to happen is that with ASTER Coin, you could make a



loan. Since the supply of coins is issued internally and controlled, it means that the more collateral on coins there is, fewer coins are available on the market. In other words, it is possible to control the quantity. The collapse of the coin price happens when large quantity of coins is sold, but in the case of ASTER Coin, this can be managed.

3) ASTER RM

ASTER RM is an AML (anti-money laundering) module that reduces the financial risks of financial institutions. Tenspace has currently signed supply contracts with two U.S. financial institutions and is carrying out services. ASTER RM also pays points as compensation for user's information provision.

2019. 08. 미국 Strait financial Group과 ASTER RM 계약



2019. 11. 미국 NANHUA USA FUTURES과 ASTER RM 계약



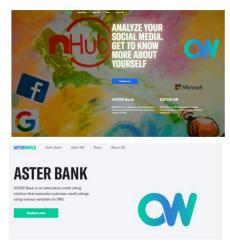
4) ASTER World

ASTER World was established in August 2020 with Money World Association (MWA), a subsidiary of Singapore's Tembusupartners, to explore the ASTER Bank (alternative credit rating module) market in Southeast Asia.

The contract details for ASTERWORLD, a joint venture between TenSpace and MoneyWorld, are as follows.

- (1) Southeast Asia (Singapore, Malaysia, Indonesia, Philippines) Aster Credit Rating Services
- (2) Developing mobile loan services in Southeast Asia, Korea and other regions
- (3) Integrated Aster-related systems project management and IT solutions to specific internal and external partners of Aster World

2020, 08, Established ASTER World as a joint venture with Money World in Singapore







5) ASTER USA

ASTER USA is a local U.S. corporation that will sell ASTER RM, which is well–received by signing contracts with two U.S. financial institutions at the end of 2019. It is pushing for the establishment of a corporation in June 2022, and after the establishment of a corporation, it will be serviced to U.S. blockchain custom companies and securities companies. It will then supply the U.S. bank in the second half of the year.

ASTER USA ANTE Per la management and arring subdisce that we were received strong subdisce to DSC. Establish a new evaluation system that reflects social data, which were not used before Establish a new evaluation system that reflects social data, which were not used before Funded links Funded li

2022, 06, ASTER USA 설립 예정

6) Participation in the Metabus ecosystem (Agreement with Awesomepia)

Metaverse, a compound word of 'Meta' and 'Universe', is an online platform where individuals realized in the form of avatars can perform real world activities like playing, working, earning, and spending money or communicating with others in the 3D virtual world. Metaverse is one level up in concept, higher in participation, and has become world trend, of which the global market is expected to be over 280 billion US dollars in 2025.

It is natural that cyber currency should be used in cyber world. As the advance of metaverse technology, demand for virtual currency technology has increased. Decentral (MANA), Exy Infinity (AXS), and Engine (ENJ), The Sandbox (SAND) are those best known among metabus coins.

Aster has been doing research on the potential of blockchain application technology for three years with its virtual technology partner, Awesomepia, and has been preparing to enter the market. Aster's founder, Koh Jin-seok, is also taking position of CTO in Osompia.



Aster's joint business partner, Awesomepia, is XR innovative enterprise carrying out metaverse project of Lotte Group (virtual tourism, tentative name: Healing Tour) with Lotte Group's affiliated advertising agency, Daehong Communications INC. under contract (signed in March 2021). Awesomepia has also entered a strategic partnership with LGHelloVision and is conducting joint projects.



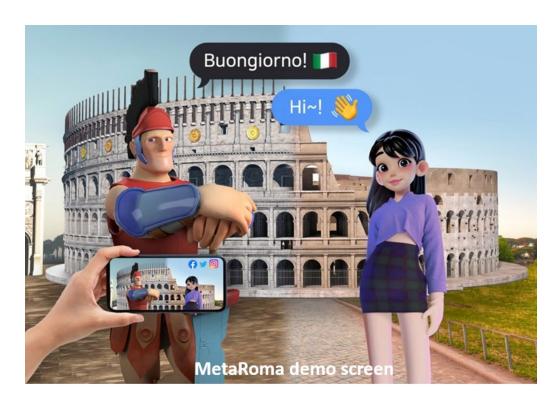
Healing Tour Metaverse is an aggregate of ICT convergence technology, in which economic activities are possible based on block-chain technology and NFT with the XR background, communicating by Al Human.

'Meta Live' constructed by Awesomepia is a metaverse platform to which Aster blockchain technology is applied. AsterPay solution is the prime program which provides Meta Live with the means of cyber currency payment. Aster coin is a key currency in Meta Live together with Bitcoin. Payment and NFT technology are applied to Aster coin.

7) Participated in META-ROME implementation project.

META-ROME project joint-venture consisting of ETRI (Korea Electronics and Telecommunications Research Institute), Awesomepia/Metarex, ENEA (Italian National Organization for Sustainable Economic Development), and Italian startups has launched task-force team for its metaverse project. This project is supported by EU fund with

total amount of 150 million for 3 years. ETRI and ENEA have already had 4 year experience of cooperation and joint work, keeping favorable relationship. Among projects proposed, META-ROME is the sole metaverse project. In META-ROME, virtual tourist attractions are constructed and the cyber real-estate transaction is possible using Aster coin. Cyber real estate is realized in META LIVE by METAREX.



8) MetaREX

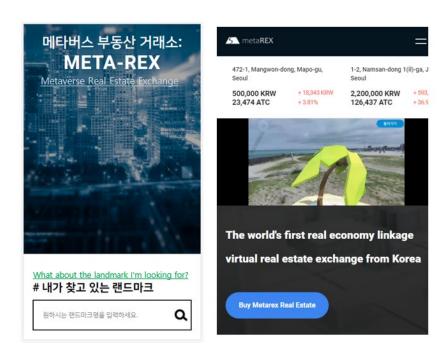
Metarex (https://metarex.global/), set up in 2021, is the world first exchange where users can buy or sell, as well as own, cyber real estate in the metabus world expanded to be linked to the real economy.

Metarex co-operates cyber real estate exchange together with Dream Security, a listed company, which is well known for running CBDC project with Kakao. CBDC is a public project ordered by Korean central bank, Bank of Korea.

Metarex plans to build the global community expanding its scope to virtual tourism, commerce, advertising, entertainment, and community services by analyzing users' SNS information and activity patterns in Metaverse.

The transactions in Metarex are based on free trade among participants. Metarex cyber real estate transaction currency is Aster coin. The issues on the real estate of real economy are reflected through linking with the real estate transaction information disclosure system of the Ministry of Land, Infrastructure and Transport. By 2022, it is scheduled to launch profit—making business in Meta Live. In the future, Aster Blockchain technology will be used for metabus projects of Lotte and LG, and it is also expected to be actively used in metabus projects of various institutions such as local governments.

Metarex is virtual real estate exchange. Meta Live is a virtual world where virtual real estate and tourist destinations are developed and constructed virtually. In these two flatforms, Aster is used as currency.





MetaREX X MetaLive: O2O



9) Singaporean investor, Tembus, invests in Aster following KakaoClaton

Tembus made its investment in Aster as the second investment in Korean cryptocurrency next to Kakao cryptocurrency Clayton.

Tembus is famous for its investment in BitDAO together with Peter Thiel who is the co-founder of Paypal with Elon Musk of Tesla.

Tembusu is the first company Kakao Klaytn visited when attracting investment from Singapore. Tembusu Partners is a Singaporean mid-sized private equity fund that

usually invests in the early-stage ventures in the field of technology, education and healthcare. The founder and chairman is Andy Lim.

The Chairman Andy Lim majored in Engineering at the University of Cambridge, graduating with honors in 1979. After completing eight years of service for Singaporean Government, he obtained an MBA from the University of California (UCLA). Co-chairman Lim Hu-Hua who served as the minister of Singaporean ministry of transportation and the vice chairman of Singaporean National Assembly is now working for Temasek Holdings (2000 – 2004), a Singapore sovereign wealth fund as Managing Director.

Tembusu is famous for making great profits from its initial investment in Kakao Clayton. Tembusu and Kakao Klaytn are cooperating in the blockchain sector. Tembusu's blockchain fund manager, Khoong Hock Yun, is one of the founding members of Kakao Claton and now the director of it. Aster intends to expand investment in virtual real estate business in Southeast Asia with Tembusu.

Starting with the investment of \$1 million from Tembusu, Aster is planning to attract up to \$10 million from major global funds, Tembusu and Aster's Senior Advisor Kim Yong-moon mentioned.



4. ROADMAP

To build ASTER ecosystem, Aster Coin plans to enter the metaverse market based on the accumulated achievements of ASTER Bank and ASTER RM, and, it also has the target of entering one of the world's Big 5 global exchanges by the end of 2022.

5. TEAM

(1) ADVISOR OF ASTER COIN



JONGJOON KIM

2012.03 ~ 2014.11 The 5th CEO of Hana Bank

National Packaging for Korea Sharing People in 2013



INKYU SONG

Adjunct Professor, Korea University

Templeton Asset Management Senior Research Analyst



YONG-MOOM KIM

Tembusu Partners Senior Advisor Blockchain Fund

Advisor to the Korea Internet Security Agency (KISA)



FONG JEK GAN

Chief Investment Officer of Jubilee Capital Management

Senior Vice President with Media **Nusantara Citra Investments**



(2) MANAGER OF ASTER COIN



JINSEOK KOH

CEO of Tenspace

CTO of Awesomepia

Former CTO of "I LOVE SCHOOL"

Graduated from Seoul Univ.



BONGJOON KANG

CEO of TSNET

Samsung Fire & Marine Insurance's new system promotion team.

Completed Ph.D. program at Korea University.



WONHOON JEONG

Chief manager of Tenspace

Adjunct Professor, Open Cyber

University of Korea

Team manager of Financial

Center, Maekyung Internet

ASIA Business Daily



JINGEOL LEE

Director of the Institute of Virtual Assets, ASTER.

Director of Metabus Research Institute, Awesomepia.

Graduated from POSTECH.



HOJUN IM

Director of Blockchain NFT Research Institute, ASTER.

Graduated from POSTECH.



JUNBOK LEE

CoinHubKorea CEO

Taurus Investment Securities

Senior IT Analyst

LG Electronics Product

Planning Manager

Korea University Management

of Technology Master