

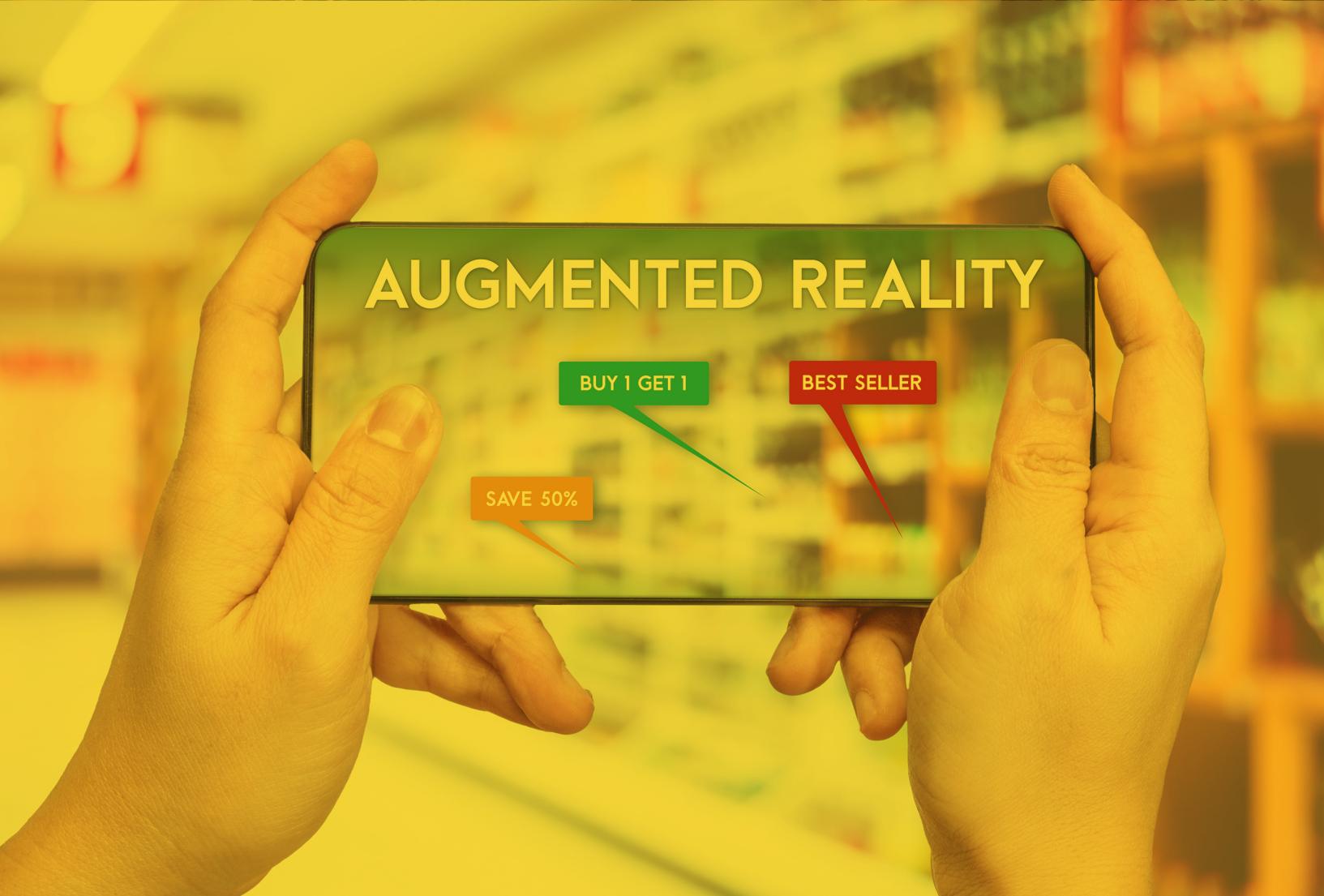
XRUN PROJECT

An air drop advertising platform
in which everyone can participate

Crypto-Currency Reward Advertising Ecosystem
with Cross-Chain Exchange



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Abstract



Abstract

The purpose of this white paper is to provide a more efficient, intuitive, transparent and fair reward system for the advertising ecosystem by using highly advanced technologies including Extended Reality(XR), Augmented Reality(AR), Virtual Reality(VR), and Mixed Reality(MR), providing digital contents. With the aim of solving serious problems such as advertising fraud, personal information protection, consent to receive sponsorship message, increase of advertising blocker, inefficient unfairness due to advertisement cost, unreliability of advertisement efficiency, etc., which destroy the existing online advertising environment, the digital advertising industry is seeking next generation solutions.

XRUN-advertising is a distribution type XRUN AD-Platform utilizing Ethereum-based block chains and smart contracts for fair advertising and a reliable advertising ecosystem while XRUN cryptocurrencies are used as Key-Currency for various cryptocurrencies.

The XRUN AD-platform can build a high reward systems, fair advertising, and a reliable advertising ecosystem for the advertising merchants(advertising clients), advertising buyers(participants), cryptocurrency issuing companies, and validators within a blockchain P2P network for the credibility, fairness, and efficiency along with the promotion of cryptocurrencies of various areas.

Currently, digital advertising provides accurate solutions for the advertising clients paying high advertising costs for having to take advantage of high efficiency locations and times and complaints about unclear campaign results. The XCA(XRUN Consensus Algorithm) for creating reliability and fairness in digital advertising creates new blocks using the Proof-of-Discovery (PoD) and Proof-of-Stake(PoS) methods.

The advertising buyer obtains various cryptocurrencies using the PoD(Proof-of-Discovery) method. The validator calculates by aggregating the stakes of PoD and PoS system, and XRUN cryptocurrencies held for 80% and those acquired by the PoD method are converted based on XRUN and ratios to yield 20% for appropriation. The PoD method is dApp of XR(Extended Reality) technology, which utilizes mobile App of the XRUN-advertising ecosystem to acquire cryptocurrencies through immersive experience and advertising missions.

ABSTRACT

Abstract



So the advertising merchants receive high advertising efficiency by taking advantage of the type of advertising and the advertising buyer's desire for acquiring cryptocurrencies.

Therefore, this white paper provides the XRUN-advertising platform block ecosystem based on the big data, the credibility, fairness, and efficiency created by the digital advertisement market, the security related patents possessed by the XRUN team, and the opportunities for acquiring cryptocurrencies by utilizing XR contents immersion.

XRUN Introduction



1.1 Background

Recently, the augmented reality(AR) and virtual reality(VR) technologies have developed, and various contents using both technologies are being produced and consumed. Here, augmented reality(AR) is a hybrid reality that combines reality with virtual reality. Representative examples of domestic and overseas applications which have brought sensations around the world since their release as a new mobile game for Nintendo, is "Pokemon Go". Pokemon Go is one of Nintendo's most popular products which sold over 240 million copies across the world.

What is unique about the mobile game version of the series is that it is a game that allows participants to collect and cultivate various Pokemons while moving around reality by applying Augmented Reality(AR) and GPS technology.

The participants' reaction was explosive, and Pokemon Go ranked first in the US iOS and GooglePlay in approximately 3 days after its launch, and ranked third and sixth in sales in Australia and New Zealand, each respectively. Furthermore, since the launch of Pokemon game in various countries, there have been accidents, and people who tried to catch Pokemon at restaurants, among the attracted users. Reflecting this popularity, Nintendo's share price rose 35.7% over the two days since its launch.



[Figure 1] PokemonGo

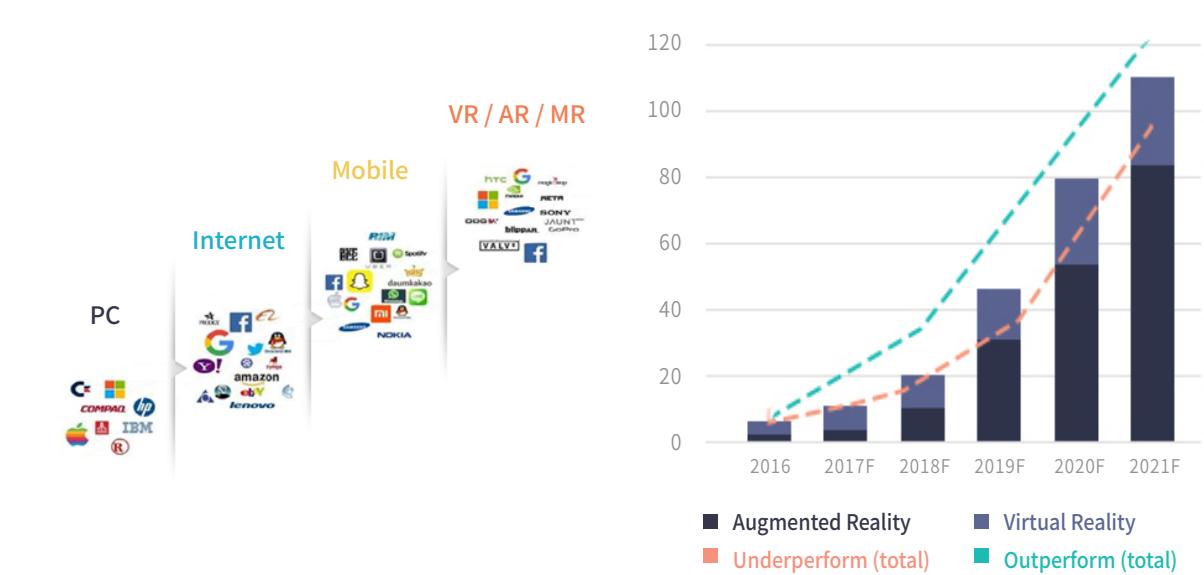
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Eventually, Pokemon's popularity proved that participants in the global market are very thirsty for new technologies that change the paradigm such as virtual reality(VR) / augmented reality (AR), and VR and AR are proven to be technologies that can tear down the boundaries between realities, and we believe that fact that the participants can be more immersed in the game is proved through the popularity of Pokemon Go. Therefore, it presented to us the possibility that the market could grow faster than the time when we looked at the existing virtual reality and augmented reality. XR content is evolving to enable the production of immersive contents by introducing high performance HMD(Head Mounted Display) devices such as those made by Sony, Oculus and HTC. HMD equipment is being studied constantly, and if the weight reduction and miniaturization of HMD equipment is realized, the revolutionary paradigm of digital contents is expected to change. Currently, XR content is highly utilized for smartphones, but various devices are rapidly developing, and consequently, the content utilization of XR is likely to increase rapidly.

In addition, augmented reality(AR) means that through a computer, the user creates an artificial environment as if it were actually in the situation and environment. As we can experience situations that are difficult to experience through devices, many contents are created and



[Table 1] Digi - Capital VR / AR revenue(\$B)

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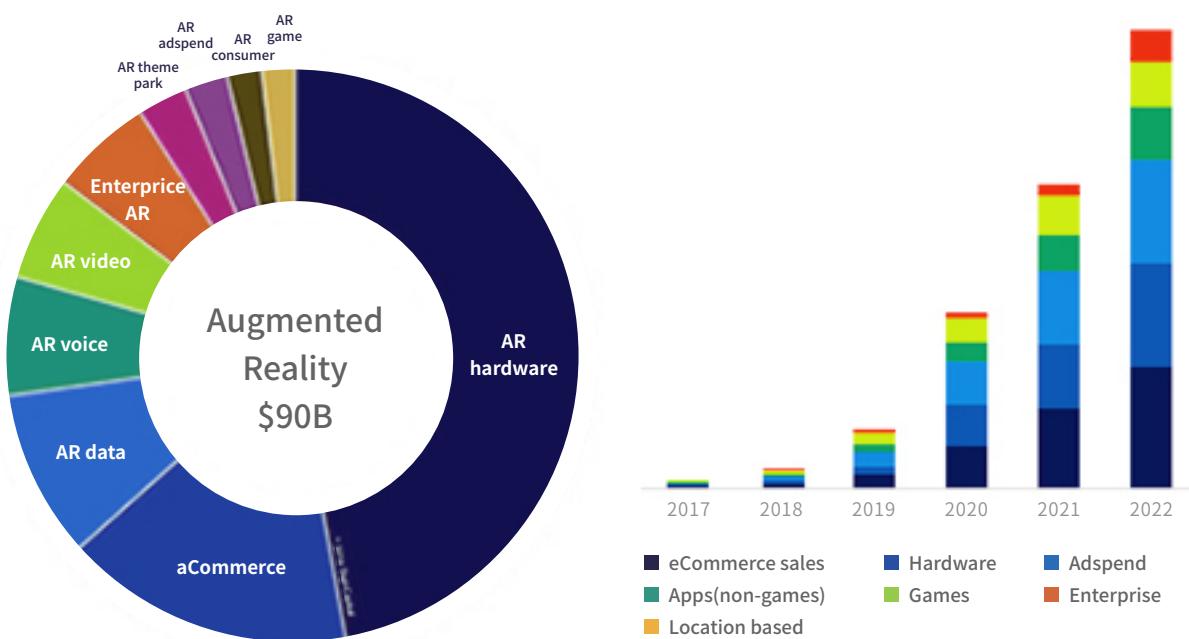
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provide different experiences to the consumers. According to Digi-Capital, a consulting firm, as for the XR market's size, the AR application programs will be installed in 3.5 billion mobile devices over the next five years, with the revenue expected to reach \$90 billion.

Reviewing the dynamic growth of each sector, we can ascertain that the major areas for global profit generation are the most promising and fast growing in the AR advertising and AR game industries..

Recently in the industry, virtual and augmented reality technologies have become increasingly popular, and new market creation and market expansion are expected. The virtual and augmented reality and related services market is expected to expand by more than 20 times that in 2016 by the year 2020. The combined spending of virtual and augmented hardware, software and related services is expected to reach \$13.9 billion in 2017 and \$144.3 billion in 2020 from \$6.1 billion in 2016, respectively.



[Table 2] AR Sector Revenue

In addition, as the content market is expected to grow at a large scale in connection with the fourth industrial revolution, such as around content search and context awareness, focusing on virtual and augmented reality technologies, the size of the virtual and augmented reality market

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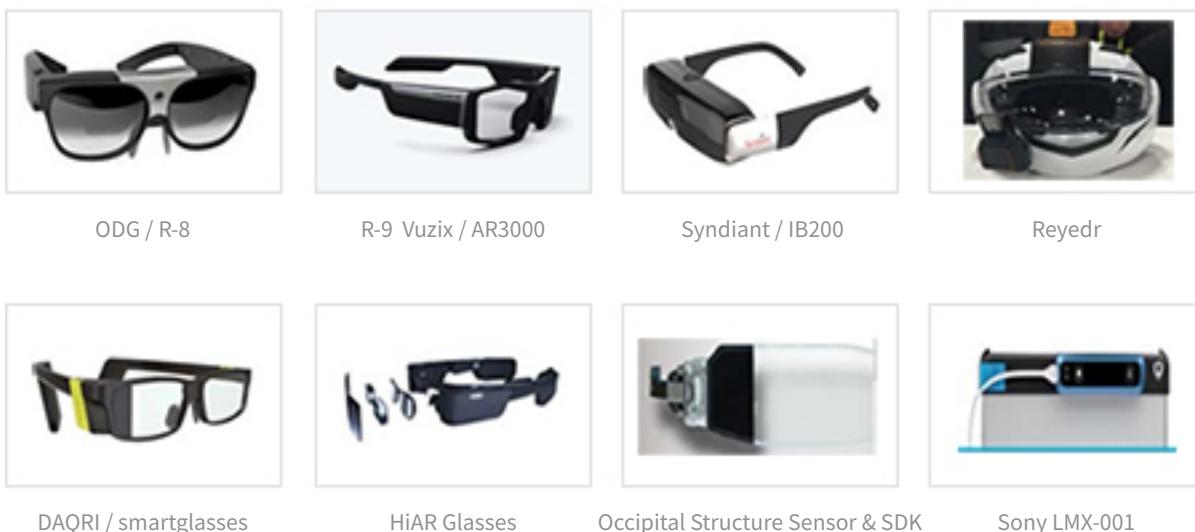
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will increase rapidly to reach \$151.3 billion in 2022, while the market for image recognition is expected to grow from \$15.95 billion in 2016 to \$38.92 billion in 2021, with the context recognition computing market is expected to grow from \$56 billion in 2016 to \$125 billion in 2023.

In the virtual and augmented reality market, virtual reality is currently driving growth, but in or after 2018, the augmented reality will lead the growth. In 2020, the augmented reality market will account for more than 70% of the total market. If the initial virtual reality industry is growing around hardware such as HMD, the software and services market, such as platforms including contents will capture an even larger share after the basic dissemination of the virtual reality(VR) equipment

The virtual and augmented reality device market is expected to grow as the augmented reality' HMD unit is further segmented, and the functions of the application platform are expected to diversify according to the augmented reality application environment. In particular, the market for an augmented reality's HMD which can operate as an independent type like HoloLens is expected to explode.



[Figure 2] Status of Augmented Reality(AR) Devices

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Domestic technological levels related to virtual reality(VR) and augmented Reality(AR / MR) application technologies show technical gaps of 1.6 and 1.5 years with 80.8% and 81% relative to the US, which is one of the world's top technology holder countries.

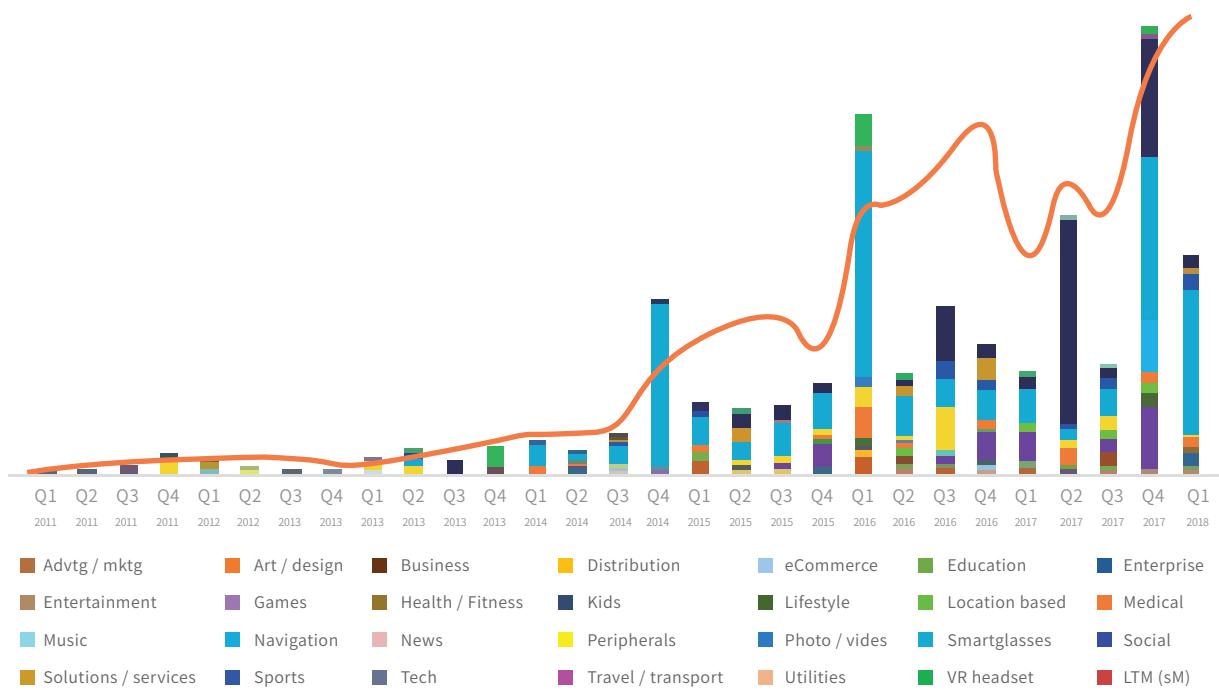
The devices and networks that play an important role in the growth of the virtual and augmented reality market have global competitiveness, but softwares and contents are more vulnerable than those of the developed countries and require intensive investment. In the case of virtual and augmented reality, mobile AR / VR attract quite a bit of attention due to the popularization of smart phones, miniaturization of augmented reality technologies, and the demand for the users' immediacy and convenience. In addition, when hardware devices spread to the public, this market is expected to grow significantly. The smartphone-based HMD-type devices(such as Samsung Gear VR) currently have a global competitiveness, yet the competitiveness of the augmented reality's EGD(Eye Glasses-type Display) anticipated to take over the equipment market in or after 2017 is still short.

The development of the smart glass technology equipped with multi-camera, multi-sensor (depth, gyro, etc.), high-performance computing power, light weight, high resolution, and high-speed wireless communication function is required because it requires objects, background and gesture separation. In the case of Magic Leap, massive investments from global corporations such as Google, Qualcomm, and Alibaba are being promoted and development of AR glass technology is under way on a confidentiality basis. Microsoft is also promoting glass-type Augmented Reality(AR) technology with "HoloLens" to accelerate the device development competition.

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Investment Status of the AR Market

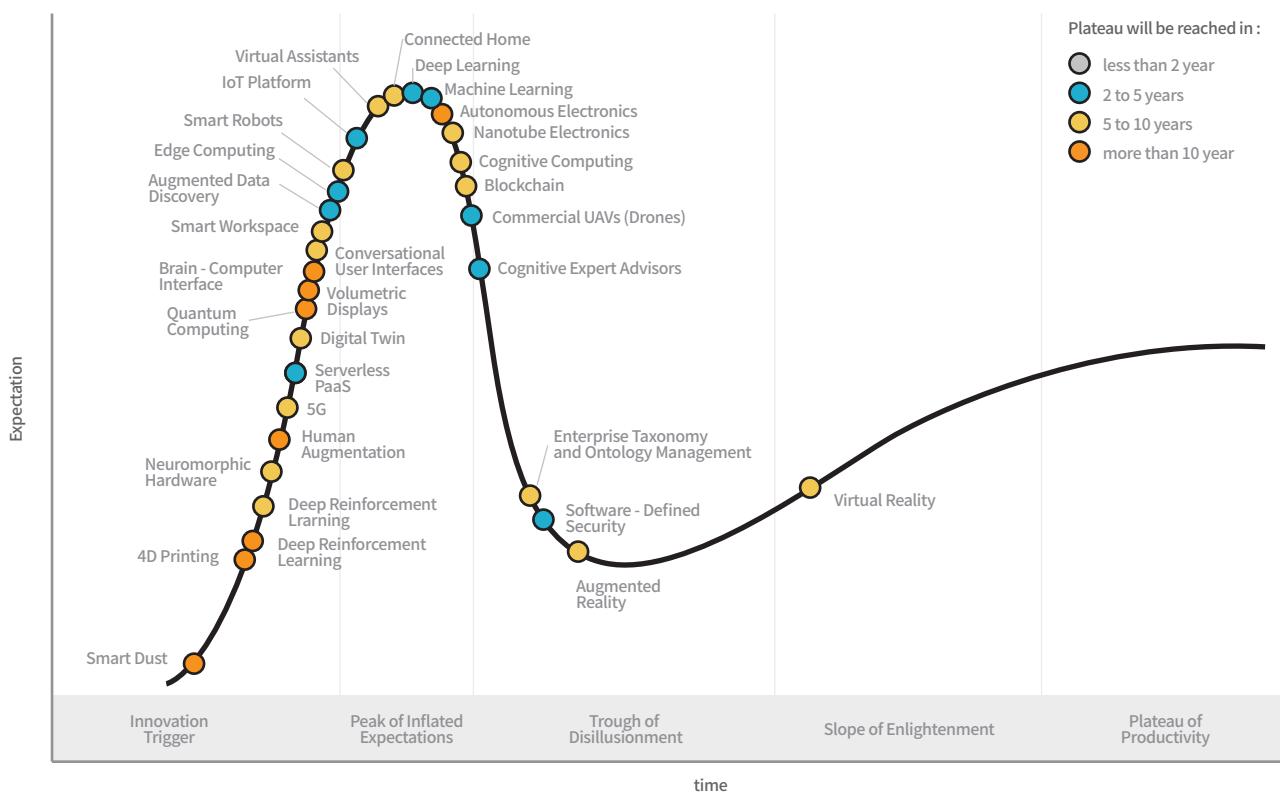


INTRODUCTION

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Research has shown that the use of augmented reality increases 6% over the year to 24% compared to other experimental advertising technologies in the marketing field, meaning that large business operators and advertising agencies around the world are aggressively adopting augmented reality.



[Table 4] Gartner Hype Cycle for Emerging Technologies, 2017

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Technology Priorities According to Marketers Worldwide 2016 & 2017

% of respondents

	2016	2017
Power of mobile devices	66%	63%
Big data	53%	53%
Mobile app development	56%	48%
Social media software	57%	46%
Security and data protection	35%	37%
Internet of things	51%	35%
Artificial intelligence	13%	30%
Cloud technology	31%	27%
Virtual reality	26%	26%
Mcommerce	60%	26%
Augmented reality	18%	24%
Voice assistants	-	22%
Wearable technology	21%	13%
3-D printing	7%	7%
Drones	-	6%
Blockchains	-	5%
Robotics	-	5%

Note: in the next 12 months; respondents chose their top 5
Source: NewBase, "Marketing Priorities 2017," June 14, 2017

[Table 5] Technology Priorities According to Marketers

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1.2 Issues of the Current Digital Advertising XRUN is Paying Attention to

The size of the digital advertising market is estimated to be \$269 billion spent for digital advertising worldwide by 2018, and \$335 billion by 2020, according to German statistics.

The growth of the digital advertising market is fueled by the ability to deliver targeted advertisements based on the Big Data, which can achieve a far more effective advertising effect. It is possible to identify specific achievements such as behaviors, clicks, and purchases that buyers take, and some evil advertising companies manipulate view counts through computer programs or robots due to data imbalance between advertising clients and advertising companies. Illegal sexually explicit advertisements, fraudulent advertisements, and illegal clicks through SNS's are used in a mixture of 'Click Fraud', 'Fraudulent Click', 'Invalid Click' and 'Illegal Click'.

In addition, the illegal advertising factors include : when an advertising buyer of a mobile advertisement receives an advertisement on a mobile phone, the behavior of not holding interest or caution to the advertisement(cognitive avoidance), behavior(mechanical avoidance) such as closing a mobile advertisement via smartphone application functions, and the behavior of (physical avoidance) preclusion such as not installing an application in which a mobile advertisement is received. And currently, SNS advertising has been allowed from September 2018, however, it is not permitted to advertise cryptocurrency ICO and electronic wallet. There are about 1,700 kinds of cryptocurrencies listed worldwide, and new cryptocurrencies are being generated each year. However, there are not enough effective public relations channels for cryptocurrency ICOs, and there is not enough information to be objective indicators before listing.

In order to analyze the above issues and effectively use the XRUN AD-Platform based on the blockchain, we intend to present solutions to satisfy needs and wants by analyzing behaviors of advertising buyers for the continued use and avoidance factors of mobile advertisements by advertising buyers.

First, the mechanical avoidance factor is the behavior factor that intentionally closes the advertisement when the advertisement is displayed on the screen. Second, the physical avoidance factor is an act that avoids the advertisement itself, and refers to the act of not installing the app that is likely to be advertised

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Third, the cognitive avoidance factor refers to a behavior that does not pay any attention to the advertisement of the smartphone even when it is exposed on the screen.

As in the details above, cryptocurrency advertising avoids most advertising buyers with the 3 avoidance methods.

In addition, competition for global companies is getting fiercer in order to prevail in the virtual and augmented reality market service, which is a recent issue, and R&D and services development centered on virtual, augmented and mixed reality(VR / AR / MR) technologies are becoming such a heated debate.

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1.3 Solutions of XRUN

In order to bring a positive effect on the intentions of continuous use among the 3 factors of mobile advertisement, when one tries to avoid advertisement, which is a negative action for advertisement, it changes to positive change of advertisement through advertisement reward. In order to solve the advertising avoidance factor, we can build a high reward system for advertising merchants (advertising clients), advertising buyers (participants) and validators, along with fair advertising and efficient and reliable advertising ecosystem by using a blockchain P2P network. Digital advertising also exists in various forms such as banner ads, e-mail, Social Network Services(SNS), and You-Tube of portal sites. In recent years, digital advertisements have been rapidly incorporated into various types of digital contents. In addition, XRUN is also used as an integration of XR(Extended Reality) to induce fun and interest. It can also optimize advertising efficiency by meeting and increasing the desire to possess cryptocurrencies for the advertising buyers.

The XRUN AD-Platform dApp is consisted of mobile application [XR(PoD Mining), Wallet, (Crypto-Currency-Exchange)], advertising platform [front-end, back-end] blockchain, and has built a high reward system, fair advertising, and a reliable advertising ecosystem for advertising merchants(advertising clients), advertising buyers(participants), cryptocurrency issuers, and validators in the P2P network within the XRUN blockchain's P2P network.

The advertising buyer(participant) can track and search to acquire the advertisement of the XR content, and can obtain the cryptocurrencies after performing the mission of the advertisement, while the advertising merchants can secure the high advertising efficiency, fairness, and reliability by utilizing XR contents.

The XRUN-advertising platform blockchain adopts the XCA(XRUN Consensus Algorithm) and generates new blocks with the Proof-of-Discovery(PoD) and Proof-of-Stake(PoS) methods.

The cryptocurrencies mined by utilizing the Proof-of-discovery(PoD) method using XR content and the Proof-of-Stake(PoS) method can be mutually exchanged. The XRUN AD-Platform utilizes the Big Data of worldwide participants to extract, analyze and re-process the investor DB of cryptocurrencies to be used for the ICO(Initial Coin Offering) marketing and new investor discovery.

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XRUN has developed a high level of immersion, fun factor introduction, high reward system, fair advertisement, and a reliable advertisement ecosystem for the best success case in the cryptocurrency advertising market that combines XR and launched the XRUN Blockchain AD-Platform service to meet the needs of the new business of the fourth industrial revolution. Now is the time to invest in technology and new services in the XR field.

1.4 What is XRUN-Advertising?

XRUN is a blockchain advertising platform that utilizes the highly advanced technology, Extended Reality(XR). The XRUN AD-Platform Ecosystem is a distributed type advertising platform for building a fair and reliable advertising ecosystem based on smart contracts, and also mutually uses the PoD and PoS methods to generated the new blocks.

In addition, it uses high reward system and "location marketing" (or "proximity marketing") to solve advertising avoidance factor, and integrates XR(Extended Reality) to attract customers to the target place, which induces fun and interest and immerses them in the advertisement, enhances the efficiency of the advertisement, satisfies and increases the possession of cryptocurrencies of the advertising buyer to create advertising efficiency. It is also used for ICO(Initial Coin Offering) marketing and discovery of new investors by extracting, analyzing and reworking the investor DB of cryptocurrencies by utilizing the participant's Big Data. XRUN's retirement policy will be retired for 3 years at 5% of the company's revenue.

XRUN is designed to resolve weak security and inconvenience and base on convenient and powerful function, security technology standard, patent, etc., and apply the simplified certification step, member registration and optimal security methodology of cryptocurrencies. Since its inception, XRUN has received much attention from advertising clients, advertising agencies, cryptocurrency sales companies and cryptocurrency exchanges.

Technical Details of XRUN



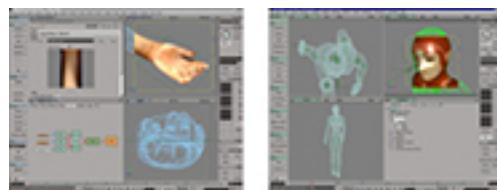
2.1 Core Technologies of XR Contents

Augmented Reality(AR) is a technology applied to mobile augmented reality, and core technologies can be divided into 3D modeling, display device, camera calibration, tracking, and matching technology.

3D Modeling: It is a technology for creating virtual models of digital contents. The creation of 3D modeling is performed by using tools such as SoftImage, Maya and others. Generally, this is a popular method for creating 3D models. To reconstruct 3D images from images, 3 images are basically taken and 3D coordinate values are calculated from the 3D images. This method has the disadvantage that clear images can not be obtained due to errors of the respective image coordinate values. Finally, there is a method of using Range Finder. This method is a method of creating an object into 3D by receiving the data that is received by the laser. This method is widely used because there is no mechanical error, but the disadvantage is that the equipment is expensive.

3D model design tools

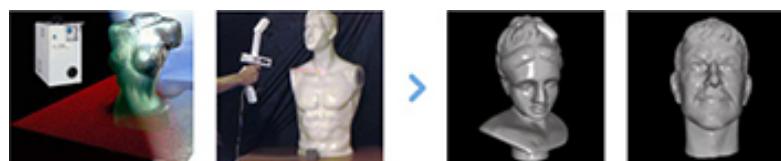
- SoftImage, Maya, ...



3D reconstruction from images



Range Finder (Laser scanner)



[Figure 3] 3D Model

Technical Details of XRUN



[Figure 4] Acquiring Cryptocurrencies via Location Marketing

Display device is a device that represents an augmented reality. Generally, the HMD(Head Mounted Display) is a device that displays virtual objects on the face. In this white paper, XR contents produced with low polygon for dApp and quick response is registered and augmented through CMS(Content Management System) of XRUN AD-Platform. By using "location marketing" (or "proximity marketing"), the advertising buyer can see the location value and the content, which is the object of the target, in various geographical target locations and acquire the cryptocurrencies after the mission.



[Figure 5] Camera Calibration

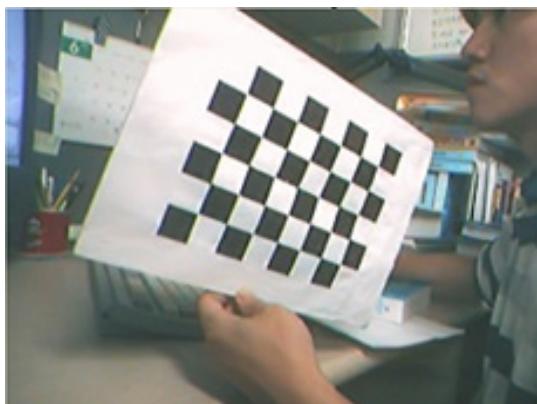
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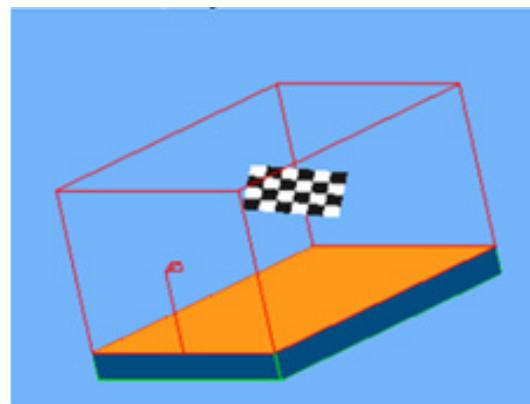
Camera calibration is one of the key technologies that can be used to position a virtual object in the correct position by calculating the focus of the actual camera. If the camera is out of focus, the 3D coordinate values may be erroneous, so the virtual objects may not be found by the buyers and so they must be accurate. To calculate this method, use the camera calibration by using patterns. Use a lot of methods to make the camera calibration using a vanishing point using a line in a pattern. This method is easy to calculate and does not cause a large error, so it is widely used for the augmented reality camera calibration method.

Calculate the camera's parameters

- intrinsic (focal length, principal points, axes scale / skew) and extrinsic (location, direction) parameters



A image taken by a camera



Calculates the relative position between a camera and a pattern

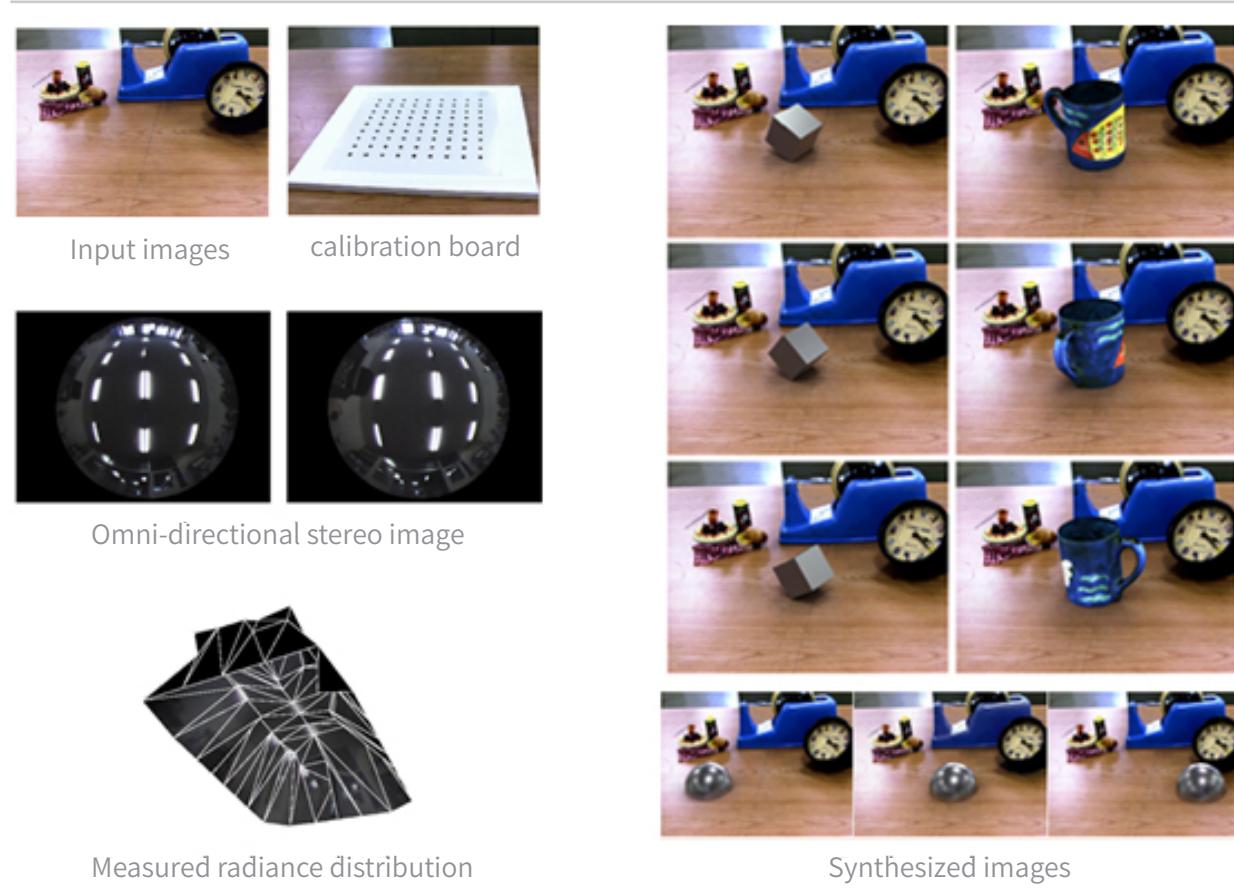
[Figure 6] camera's parameters

Tracking is a technology that can enable tracking the location, direction, and movement of an advertising buyer. Tracking technology is possible because it is equipped with a GPS device capable of transmitting and receiving geographical and location information, a gravity sensor, a location information system and a mobile device capable of receiving detailed information and applying it to the realistic background. One can insert virtual models into the real world using mobile devices. The virtual model of digital contents can be traced through the mobile app to track advertisements hidden by the advertising buyer, which can increase immersion. XRUN's content provides coins based on difficulty, and advertising merchants provide high advertising efficiency based on the immersion of the advertisements.

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The matching technology minimizes the heterogeneity between the real world and the virtual to increase the immersion level. It detects the change of the real world environment, generates the mixed image with minimizing the boundary mismatch between the real object and the virtual object, synthesizing a virtual image on the actual image. It is also a technology implemented along with tracking technology, which is one of the core technologies of XRUN contents that combines high immersion and fun elements for finding virtual objects with tracking and navigation of advertisements.



[Figure 7] Natural Intention Based Interactions

Augmented reality requires intuitive interaction and the ability to intelligently track the head, hands, and eyes of an advertising buyer over the content of an XR to provide a sense of immer

Technical Details of XRUN



sion. As for the head, responsive and accurate * 6-DOF head tracking technology can meet world-class VR motion to photon(MTP) delay conditions. In most XR environments, such as hands, games, motion, etc., the best control is to control movement with human hands without control, and track / navigate hands in the AR mode.

For the users of room-scale 6-Degrees of Freedom, simultaneous location awareness, and mapping(SLAM), additional features such as wall collision detection are provided. Finally, in the case of the eyes, eye movement tracking technology for automatic calculation of inter-pupillary distance(IPD) and more efficient 3D graphics and video rendering for the improved visual quality(Foveated rendering) are provided. To ensure a new user interface that creates a more natural intent-based interaction, such as the ability to reduce the throughput of graphics by processing high-resolution portions and low-resolution portions of the background, delivering enjoy connected and realistic high-quality service, a fast Internet environment like 5G has to be integrated.

2.2 Security and Authentication Methodology

The most uncomfortable and disturbing factors participants feel in the cryptocurrency market are security and authentication. There is a need for a solution that is convenient and has a strong security and authentication solution to solve the problem of authentication market, electronic finance, and security area. XRUN has developed XRUN's security authentication method with years of experience and research to find a methodology to secure and solve these problems. XRUN's security authentication method logs in through the user's credit card to simplify the membership process. The authentication process uses the IC card to match the PIN number, mobile phone number, and server information to expose the resident registration number, ID, and password. Instead of using a large number of IDs and passwords, one can use real cards(check and credit cards) and a higher level of security than OTPs, thereby eliminating the need for OTPs.

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Because of the physical security that can not be followed by software alone, XRUN has a SOTP(Save One Time Password) source technology. In addition, it improves the recognition that it is inconvenient when the security is strengthened, and it reduces the steps of log in, withdrawal, transfer, etc., and has the one and the only SSO (Single Sign On) technology in the world and secures usability, reliability and safety of XRUN AD-Platform.

XRUN's security authentication technology is based on a patent(Registered Patent No. 10-0982253), and this security patent is based on the "Online Information Input and Financial Transaction System and the Online Information Input and Financial Transaction Method Using It, and Recording Medium for Recording the Program for It." It was registered as the technical standard of Korea Information & Communication Technology Association in 2014. We developed a password wallet with XRUN security and authentication technology. Hot Wallet is an online connected wallet for the primary storage and trading of cryptocurrency mined by the PoD method. Cold Wallet is a wallet that disconnects from online to safely move and secure secured cryptocurrencies. The cold wallet's authentication and authorization is a security related technology that uses NFC(Near Field Communication) of smartphone by utilizing IC card(credit card and check card, etc.), which is also used as an optimized wallet for security of token.

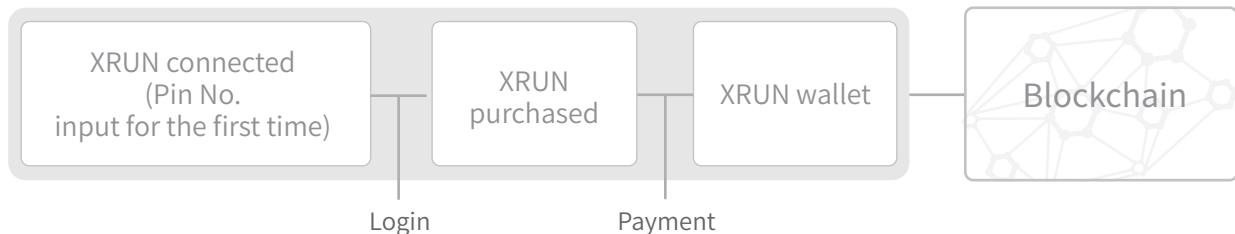
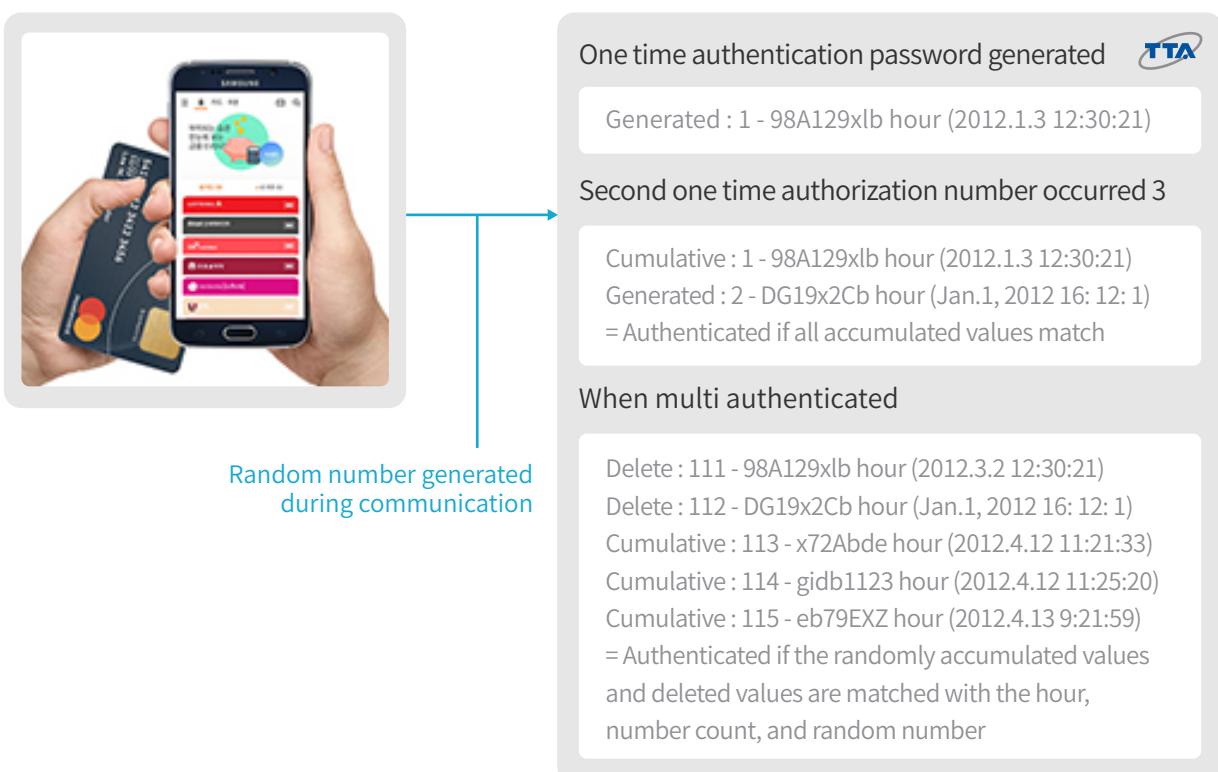
It is a high level SOTP(Save One Time Password) security that replaces membership, resident registration number, authorized certificate, login, OTP, electronic transaction, real name verification, personal authentication and the Internet ID. The Serverside stored cryptocurrencies are also a VPC(Virtual Private Cloud) methodology with bank level security, which creates a separate cloud cryptocurrencies' storage space to prevent access from the outside Internet. A security policy that puts only a part of the hot wallet 's private key(encrypted virtual key that identifies a person for bit coin transaction) in a separate storage system, Virtual Private Cloud (VPC), applying the blockchain multi-signature technology to build strong security with a third party authentication system.

Technical Details of XRUN



Personal authentication

Login, Payment, Exchange, Transaction



[Figure 8] Standard Certification for PROCESS FLOW SOTP TTA

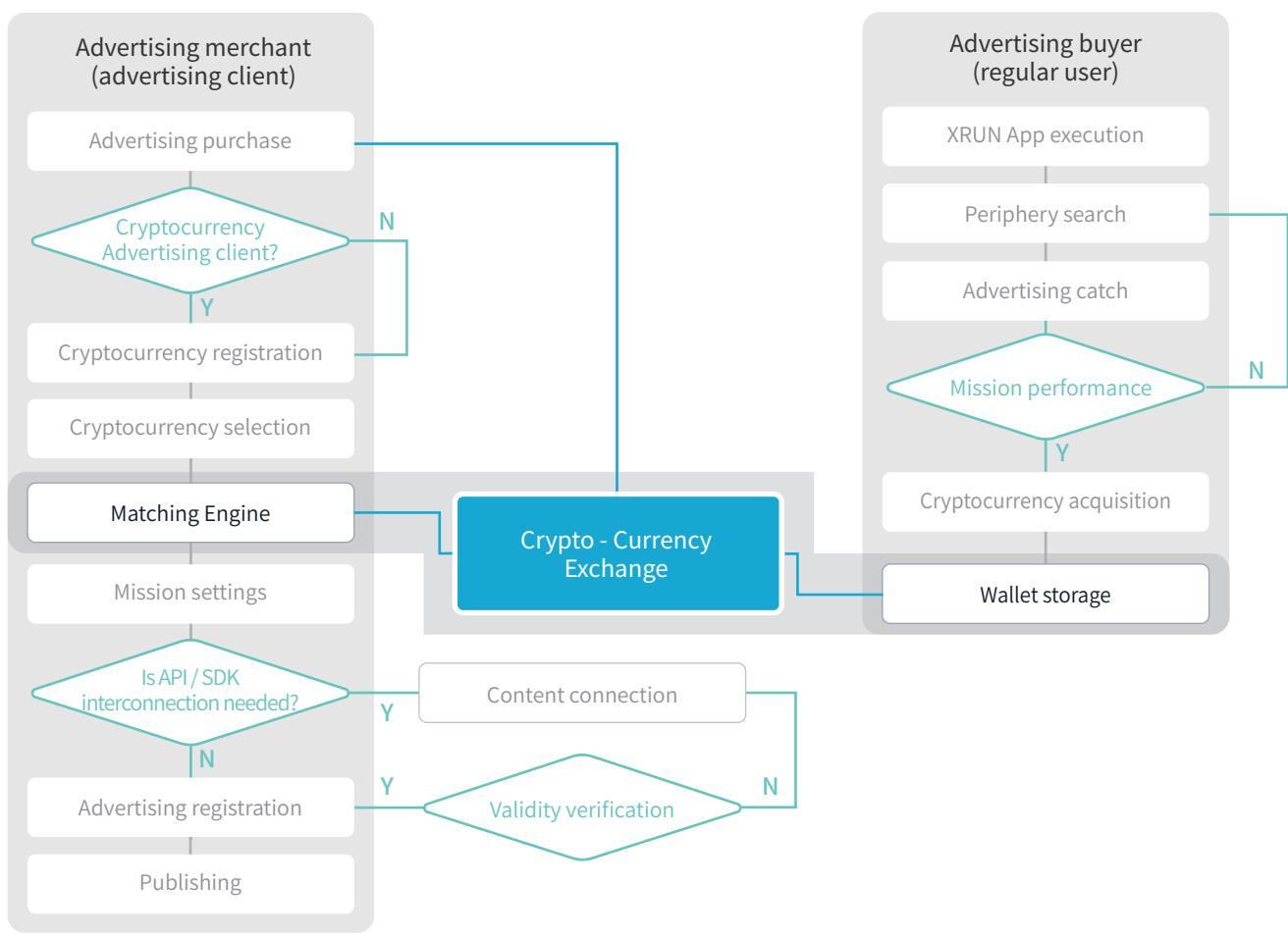
Technical Details of XRUN



2.3 XRUN AD-Platform Service Algorithm

The technical contents for XRUN are as follows.

The XR's core content technologies include 3D modeling technology to create virtual models, camera calibration technology to match real world and virtual models, tracking / matching technology to explore and track real world and virtual models after camera calibration



[Figure 9] Service Algorithm

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Smartphones have a GPS device that calculates 3D coordinates, augmented reality dApp and for quick response

Low Polygon made XR content is registered and augmented through the XRUN AD-Platform Content Management System(CMS).

Through the XR content, the advertising buyer and the advertising merchant are mined the token according to the following service algorithm flow chart.

Advertising merchant

- 1) A general advertiser buys XRUN cryptocurrencies from the cryptocurrency exchange within the XRUN platform
Cryptocurrency advertising clients set the number of air drops to the ratio of XRUN
- 2) Cryptocurrency advertising clients move to the password currency registration step and the general advertising clients move to the cryptocurrency currency selection step
- 3) Steps for registering cryptocurrencies
- 4) The tokens that have received the air drop token from the advertising clients acquire and select 20% of the advertising revenue
- 5) The stage where the number of selected tokens matching the ratio of XRUN is determined (only 50% of the total revenue is air dropped).
- 6) Steps to set up a mission (creating wallet: securing users, survey, voting, question, video, and advertising exposure)
- 7) If API and SDK connection is required, it is validated after establishing connection with external contents. If connection is not required, go to advertising registration step.
- 8) Step for registering advertisement
- 9) The corresponding advertisement will be exposed in line with the setting of the advertisement.

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Advertising buyer

- 1) Step for executing the XRUN App
- 2) Step for executing a peripheral search to retrieve the surrounding air drop password information and retrieving the location
- 3) After searching around, move to the place where the password is located and activate the XR Engine's camera of XRUN dApp at the advertisement point.
- 4) Step for performing the mission
- 5) Step for acquiring the password and storing the password in the wallet after completing the mission,
- 6) Step for moving and storing cryptocurrencies acquired by Cold Wallet for optimal security
- 7) Step for moving to the exchange for exchange with different cryptocurrencies and storing in the wallet the exchanged cryptocurrencies after adjusting the number according to the ratio of XRUN cryptocurrencies in the Matching Engine

2.4 Blockchain and Decentralized Application(dApp)

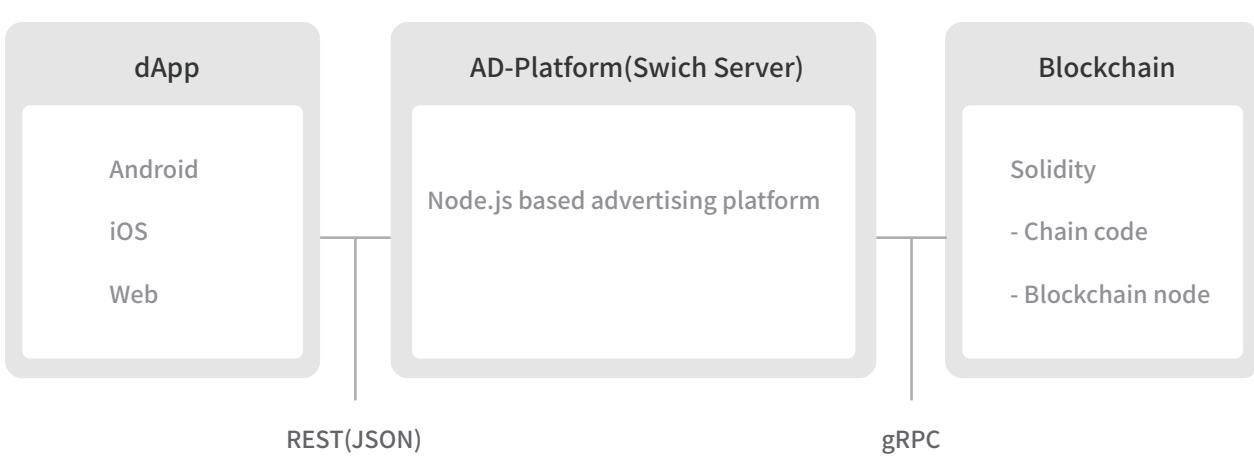
The XRUN advertising platform is built with a decentralized dApp and uses the blockchain technology to demonstrate fairness and reliability. Through the blockchain, transparent auditing and reporting are enabled. Blockchain P2P network is a node and the blockchain P2P network is consisted of a number of nodes, which are electronic devices belonging to people participating in the network. These are personal computers, tablets, smartphones, etc. connected to the network. Each node connects to the blockchain P2P network, downloads the block chain, shares all transactions, verifies and stores them. It is also its role for the node to perform to identify and approve new blocks, finalize the block, then proceed to mining it as a reward. It uses Distributed Ledger Technology and all nodes participating in the network share information. In addition, through the agreement algorithm, multiple nodes have verified the transaction according to the principle of majority vote. That is, every time a transaction occurs, a block is issued and distributed to all participants. The XRUN advertising platform dApp is a de-neutralization application with a blockchain, enabling reliable and accurate reporting strategies.

Technical Details of XRUN



2.5 Relationship of Relay Server and Participant-Blockchain

The XRUN AD Platform is built with Node.js(Severside Language), and Node.js is used as a relay server between dApp and P2P network with blockchain and improves the processing speed of the network section. In addition, various platforms(Android, iOS, etc.) communicate with the relay server(Node.js server) via dApp by communicating RESTFUL API. Remote Procedure Call (RPC) is a communication technique between processes that execute functions, procedures, etc., in different address spaces. Recently, REST based on HTTP communication has been widely used, which is also a tendency to re-adopt RPC method because the contract for request / response is not explicit and error rate is high. gRPC is a type of RPC, an RPC-based framework that combines existing RPC technology with HTTP / 2 communication by Google. gRPC adopts HTTP / 2 communication method, and it is possible to perform bidirectional communication which is faster than REST adopting HTTP communication method and can not be limited by HTTP communication method. Two way communication allows gRPC to perform complex tasks quickly within the blockchain network, alleviating performance issues that were the largest issue in the current blockchain technology.



[Figure 10] Blockchain System Architecture

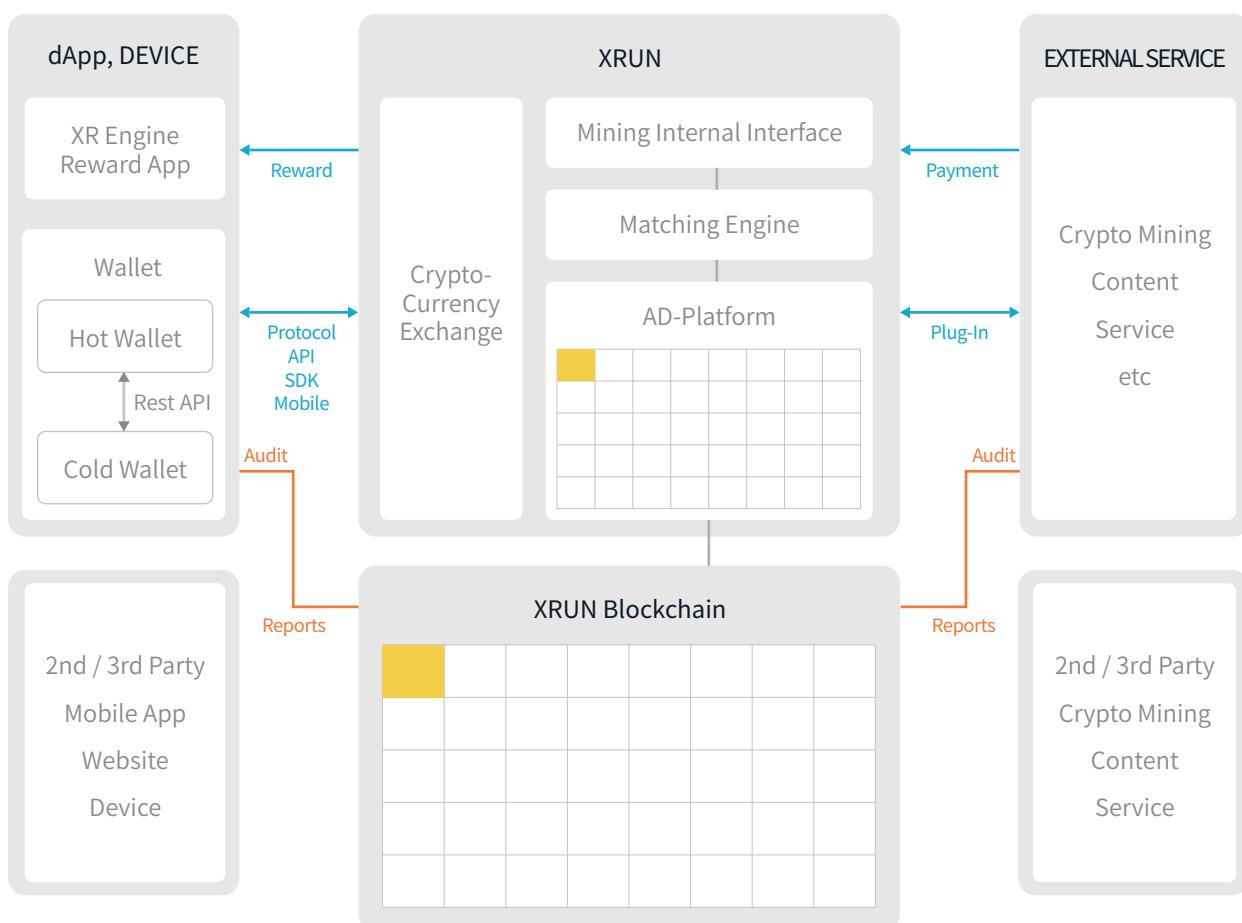
XRUN AD-Platform Ecosystem



3 XRUN AD-Platform Ecosystem

XRUN is a decentralized blockchain advertising ecosystem which freely participates across national borders in digital advertising worldwide through the blockchain P2P networks. Furthermore, it is a blockchain which enables cross-chain transactions and exchanges of personal information and digital assets between different blockchains by using smart contracts.

Beginning with the advertising management and mining functions(PoD), which are the core of the XRUN platform, the blockchain platforms such as wallets, user analytics, and transactions, among others, will be provided. Far more diverse functions required for the participants' 2nd / 3rd party application development will continue to be developed with the API.



[Figure 11] XRUN AD-Platform Ecosystem

XRUN AD-Platform Ecosystem



dApp.DEVICE(advertising buyer) is consisted of XR Engine Reward App and Wallet(Hot Wallet, Cold Wallet), and Hot Wallet is an online connected wallet for the cryptocurrency's primary storage and trading mined by POD method, and is a wallet that has been disconnected from online to securely move cryptocurrencies to a cold wallet.

XRUN Cold Wallet's authentication and authorization is based on the smartphone's Near Field Communication(NFC) security technology utilizing IC card(credit card, check card, etc.) and is also used for cryptocurrency transactions as an optimized wallet for cryptocurrency security. Through the open API of XRUN AD-Platform, one can build 2nd / 3rd party application of various types of advertisement and get reward for advertising revenue. EXTERNAL SERVICE (advertising merchant) can purchase XRUN as a means of payment for advertising costs, develop plug-in content related to ad campaigns, and develop 2nd / 3rd party contents.

XRUN is consisted of Crypto-Currency Exchange, Mining Internal Interface, Matching Engine and XRUN AD-Platform.

The Mining Internal Interface aggregates the mined cryptocurrencies of the PoS and PoS methods, settles the daily accounts and transfers the cryptocurrencies that the user has mined.

XRUN Password Exchange allows one to purchase only the XRUN cryptocurrencies. Interchange with other cryptocurrencies is calculated according to the ratio of XRUN cryptocurrencies through the Matching Engine.

XRUN AD-Platform can be extended through public API and Plug-in, and build and develop commercial ecosystem for system operation and Token Economy.

XRUN-Advertising Cases



4.1 Partnership with Travel Agencies

Travel agencies set advertisements on the tour courses. Participants search peripheries through the XRUN app, then perform their mission by holding onto the advertisements at the set advertising positions. For instance, if you correctly answer the objective question of "Why don't people eat fish at Lake Susupe in Saipan?" by entering the correct answer, the mission will be completed and the cryptocurrency will be acquired.



[Figure 12] Travel Agents' Tour Course

4.2 Store Promotion

After installing the XRUN app as a chain store open event, and if you view it with the camera of the XR Engine of the signboard's XRUN dApp, you could have the cryptocurrencies and mission activated, and you can select the menu for the mission, eat, share the contents of the food photo with SNS and the receipt barcode, then the mission will be completed and the cryptocurrencies will be acquired. The details of digital contents can be expected to increase the efficiency of advertising that combines chain store promotion, product promotion, viral marketing, and customer service events.

XRUN-Advertising Cases



[Figure 13] Store Promotion

4.3 Automobile Promotion

When an automobile company registers the contents of the advertisement for the newly released SUV's object and the XR Engine's camera views the contents of the advertisement, the contents of the advertisement will be activated, and the SUV vehicle will be virtualized for experience and the cryptocurrencies will be acquired after completing the mission.



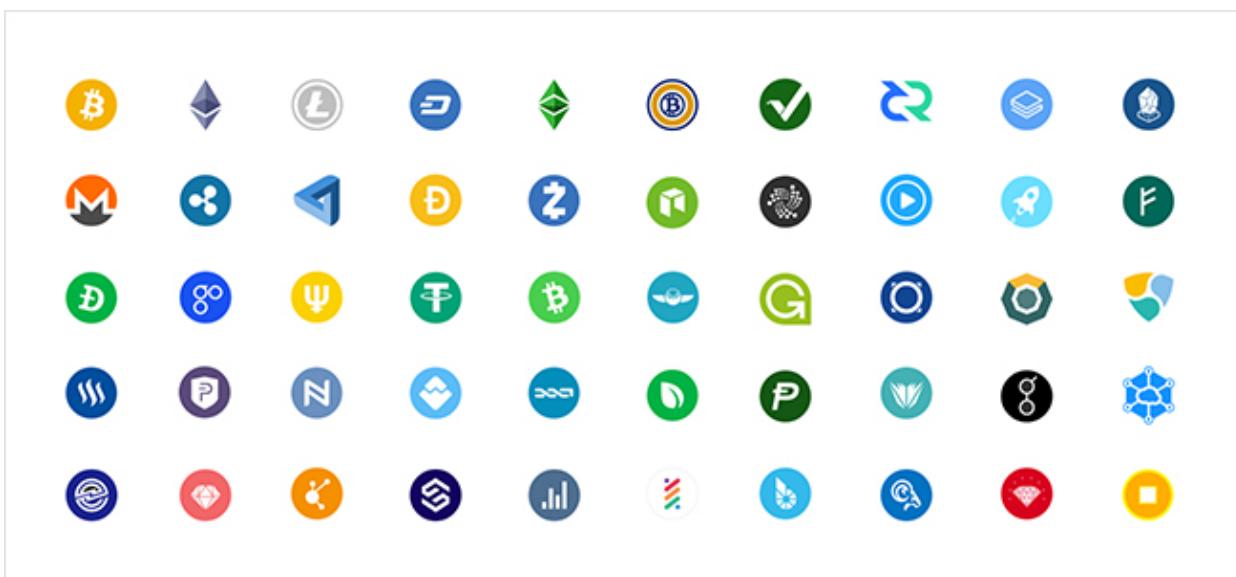
[Figure 14] Automobile Promotion

XRUN-Advertising Cases



4.4 Cryptocurrency Company

The cryptocurrency company registers the cryptocurrency advertisement in XRUN, and the XR Engine's camera views the XRUN dApp at the advertising spot to augment the cryptocurrencies, create the corresponding cryptocurrency wallet for the mission and completes the subscription for the cryptocurrency company's site to acquire the cryptocurrencies. Cryptocurrency companies receive the XRUN's registered cryptocurrencies when they are selected by the advertising merchants' reward cryptocurrencies. They supplement the disadvantages of lacking the mining of distribution cryptocurrencies, and can substitute the mining function, while securing the DB drawing interest of the cryptocurrencies.



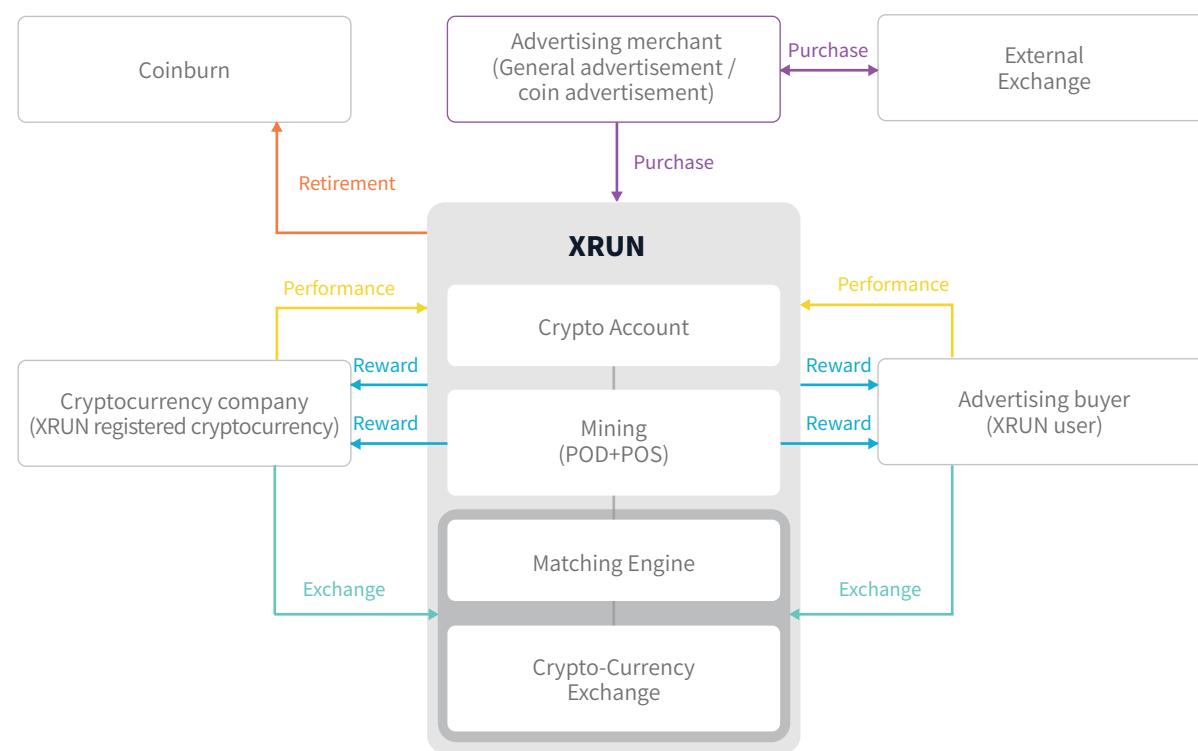
[Figure 15] Cryptocurrencies

XRUN TOKEN MODEL



5. XRUN TOKEN MODEL

The XRUN cryptocurrency is a medium to maintain and activate the ecosystem. As the number of participants in the ecosystem increases and the mutual activity of the participants increases, the value will rise, the ecosystem will operate smoothly, and the holders of XRUN cryptocurrency will be rewarded accordingly.



[Figure 16] Token Economy

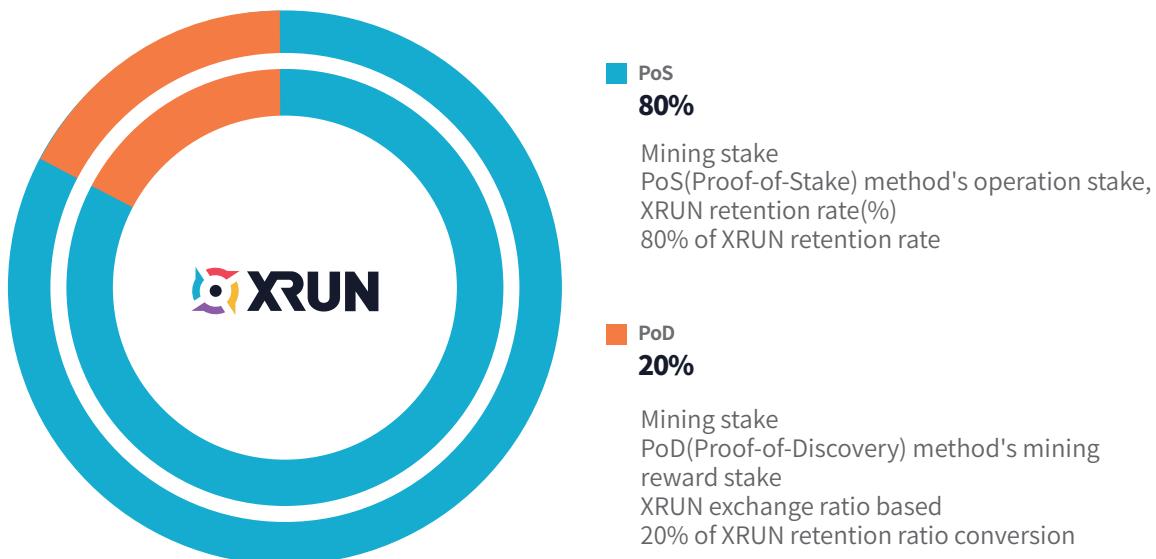
- 1) Advertising merchants buy XRUN cryptocurrencies from the cryptocurrency exchange and pay XRUN for the advertising costs.
- 2) Cryptocurrency companies will pay 20% of the revenue of the registered cryptocurrencies to the cryptocurrencies selected by the advertising merchants in XRUN cryptocurrencies. (Selected reward)

XRUN TOKEN MODEL



- 3) Advertising buyers will be paid 50% of their sales if they succeed in PoD-type mining by using XRUN (discovery compensation).
- 4) The mining is PoD and PoS methods and XRUN cryptocurrencies are paid according to the daily mining stake.
- 5) The exchange will be calculated according to the different cipher and rate in the matching engine and the exchange fee will be charged with 5% of different cryptocurrencies(exchange)
- 6) XRUN headquarters' revenue is 30% of revenue and 5% of revenue is retired for 3 years (retirement).

5.1 MINING



[Table 6] Token Allocation Structure

XRUN TOKEN MODEL



Total number of the tokens mined : 210,000,000 tokens

XRUN daily retention rate(A) = (Number of individuals' daily held XRUN tokens / Total number of issued XRUN tokens x 100) x 80%

Number of XRUN ratio for cryptocurrencies held daily(B) = (1 XRUN / Number of cryptocurrencies whose ratio has been set)

Cryptocurrencies other than those held daily for XRUN(C) = (B / total number of XRUN tokens issued x 100) x 20%

Individual daily income reward = A + C

XRUN TOKEN MODEL



5.2 XRUN TECHNICAL SPECIFICATIONS

BLOCKCHAIN PLATFORM	Ethereum
CONTRACT TYPE	ERC20
ISSUER NAME / TICKER SYMBOL	XRUN
TOTAL ISSUE AMOUNT	2,100,000,000
MINING	1,000,000,000
DIVISIBILITY(DECIMAL PLACES)	18
CONSENSUS ARGOLITHM	PoS(Proof-of-Stake) + PoD(Proof-of-Discovery)

[Related services]

- Mobile Wallet(Google play/App store) : XRUN Wallet
- AD-Platform Website Service
- Mobile App XRUN
- ICO Website: <http://www.XRUN.RUN>

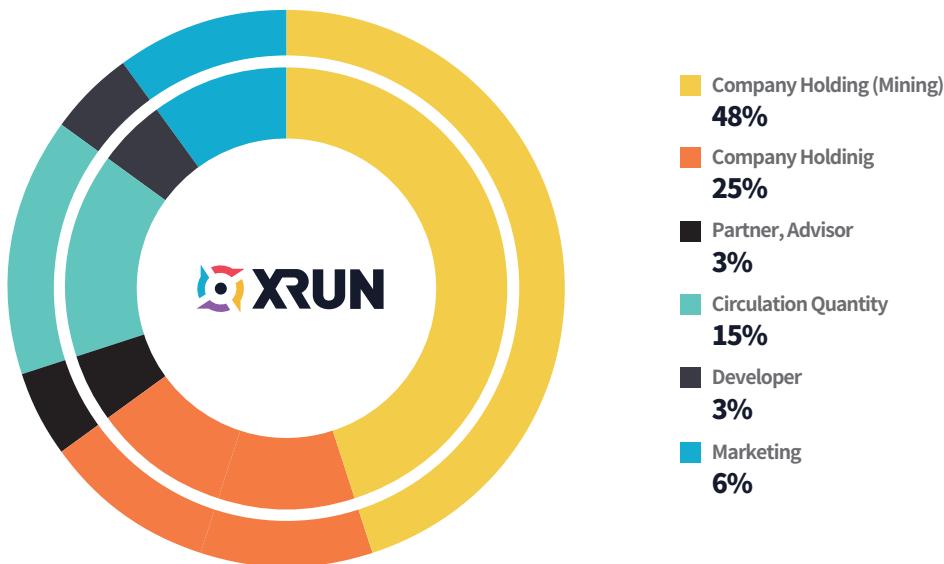
5.3 TOKEN SALE PLANNING

SALE DATE	Commenced on February 8, 2019
TOTAL TOKEN SUPPLY (총 공급량)	2,100,000,000 finite supply(limited supply)
SOFT CAP	120,000,000 Tokens
TARGET	252,000,000 Tokens
HARD CAP	315,000,000 Tokens
TOKEN PUBLIC SALE PRICE (ETH)	1,000 XRUN/ETH
TOKEN DISTRIBUTION	After ICO completion
TOKEN ACTIVATION	After ICO completion

XRUN TOKEN MODEL



5.4 TOKEN ALLOCATION



[Table 7] Token Allocation

Company Holding (Mining)	48%	1,000,000,000
Company Holding	25%	525,000,000
Partner, Advisor	3%	63,000,000
Circulation Quantity	15%	315,000,000
Developer	3%	63,000,000
Marketing	6%	134,000,000

[Retirement policy]

- If the ICO is not successfully closed(below hard cap), uncollected tokens will be retired.
- 5% of advertising revenue will be retired for 3 years.

XRUN TOKEN MODEL



5.5 SALE PROCEEDS



Item	Item
Development	40%
Operation & Management	20%
Marketing	25%
Legal / Advising	5%
Reserve	10%
Total	100%

[Table 8] Sales Proceeds

5.6 TOKEN DISTRIBUTION PLAN

- Total issuance: 2,100,000,000 tokens
- Holding for 2 years

Item	CEO	Infrastructure Development	Core Development	UXD Development	Planning	Marketing	Reward	Reserve
Total	0.5%	1%	1%	0.5%	0.5%	0.5%	2.5%	3.5%

Roadmap



Roadmap

2019

—
1Q

XRUN PROJECT STARTED

- Founded XRUN
- White Paper ver1.0 XRUN Advertising Platform's Vision introduced
- Project disclosed via advisor and online network
- XRUN trademark and patents filed for application
- Established Singapore Corporation

2019

—
2Q

XRUN

- Start Sale Token
- Listed on a global exchange

2019

—
3Q

XRUN advertising platform service launched

- XRUN Advertising Platform
- XRUN Mobile App (Android App, iOS App)
- Credit card interlocking

Roadmap



Roadmap

2019

—
4Q

XRUN Advertising Platform achieved sophistication

- Signed contract with a global advertising agency
- Developed XRUN system's sophistication

2020

—

XRUN Mainnet planned

- Mainnet standard developed
- XRUN Wallet Exchange function added
- XRUN Mainnet Architecture designed

2021

—

Achieved XRUN Advertising Platform's sophistication

- XRUN Mainnet development Kick-off

2022

—

XRUN Main Net launched

- XRUN Mainnet launched
- Launched branch offices across over 20 countries

KYC Certification

7. KYC Certification

What is KYC certification?

KYC(Know Your Customer) means customer authentication and self certification.

At any time after completing the ICO program or the ICO, each buyer will be asked to provide his or her identity information.

The buyers must accordingly provide identification(passport, resident registration card, driver's license) and residence information. At our sole discretion, we also reserve the right to require the buyers to provide additional information(i.e., date of birth) on their address, source of funds, or the buyer's account(i.e., form). The KYC authentication is an essential and basic requirement for the token distribution. All of the buyers must complete the KYC certification process in order to purchase the tokens.



[Table 9] KYC Certification Procedure

Disclaimer and Precaution



8. Disclaimer and Precaution

- This white paper is a conceptual document specified in the project to help you understand the XRUN project.
- Business plans in this white paper may not be construed as advices or investment advices on the product and can not be used based on contracts or commitments, such as sales, subscriptions, securities purchases, and other participants for invitations or contracts or promises.
- This white paper is not reviewed by any national law enforcement agency.
- All decisions made based on XRUN information are the sole responsibility of the decision maker.
- This white paper can not be interpreted as a representation or warranty.
- This white paper is used to describe our proposed XRUN platform and its requirements, and specifies the following.
- No representations or warranties are made as to the accuracy or completeness of the contents described in this white paper or any other aspect of the project.
- If without a precondition, no representations or warranties on fulfillment or justification of any future oriented, conceptual statements are provided.
- Nothing in this white paper shall be used as a basis for future promises or representations.
- We can not be held liable for any damages or losses incurred by any related individual or any other aspect of the white paper.
- To the extent of legal liability which can not be excluded, the maximum limit of applicable law is limited.
- The Team is not responsible for the accuracy of, safety of, or the correction of any error of the information.
- XRUN does not legally guarantee this white paper and all future modifications
- Business and business platform launches may be subject to changes according to development and corporate circumstances, and we are not responsible for any damages or losses incurred by the investments made or any others related thereto.
- Participation in the XRUN coin issuance does not include any future earnings or damages or losses whatsoever.
- The XRUN Coin has no obligation to update or revise such forecast information under any circumstances other than those anticipated.

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PROJECT MEMBER



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국기원



ENTER-6



한공회



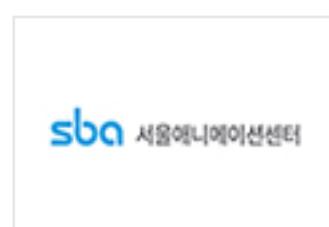
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국민일보

중앙일보

서경일보

한국경제

파이낸셜신문

한국인권신문

한국경제

파이낸셜신문

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PARTNER



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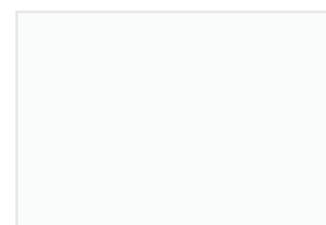
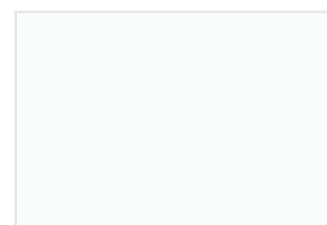
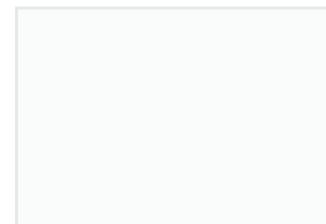
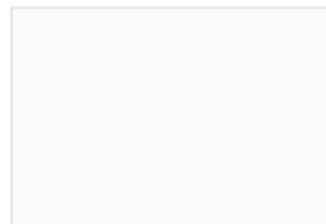
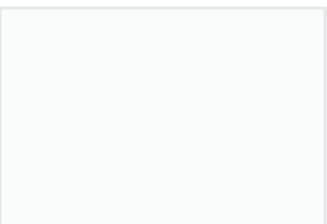
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elcoin



TMTG



Core Technologies and Awards



11.1 Patents

1. Patent No. 10-1137523

Authentication Medium, Authentication Terminal, Authentication Server, and the Authentication Method Using Them

This invention relates to, and includes the following steps of, a mutual authentication method by and between a user terminal and a server, and more specifically, the server receive the encrypted unique identifier information and password information from the user terminal, thereby storing the encrypted unique identifier information and password information onto a smart card, and issuing the encrypted unique identifier information and the password information, as a matter of a step. The user terminal transmits its unique identifier information and password information to the server and accesses the server, as a matter of a step. The server compares the unique identifier information and the password information of the user terminal stored in the smart card with the unique identifier information and the password information received from the user terminal to access the smart card, as a matter of a step. In addition, when the server determines that the user terminal desiring to access the client is legitimate, it builds a communication channel by establishing a session key between the user terminals determined to be legitimate, as a matter of a step. By this configuration, the method and system for mutual authentication between the user terminal and the server of the present invention are intended for the authentication by and between the user terminal and the server, and when the unique identification information and password information of a user terminal to be connected to the server are transmitted to the server via the server, unique identification information of the user terminal and password are stored onto a smart card for issuance. Therefore, even if the server is under attack by the attacker, the unique identification information and the password information of the user terminal can be prevented from being leaked to the outside.

2. Patent No. 10-0982253

Online Information Input Using Personal Identification Medium and Financial

Core Technologies and Awards



Transaction System and Online

Information Input and Financial Transaction Method, and the Recording Medium Recording a Program for Them

This concerns utilizing the personal information of the member registered in the personal information management institution by using the personal identification medium for member registration or login of the general web site. Thus, an online information input and financial transaction system using a personal identification medium according to the present invention using an individual identification medium that facilitates information input as well as a simple settlement procedure, and an online information input and financial transaction method using the them.

In this invention, the personal identification data read by the medium reader are transmitted to the personal information management institution, and the member personal information or the personal authentication service is provided by the personal information management institution. Thus, the login procedure and the payment procedure are combined to minimize the user input while performing the membership procedure or login procedure of the general web site. According to this invention, there is an advantage of having the possibility of simplifying member registration, log in, and settlement procedures, and minimizing the quantity of information that a user has to directly input.

3. Patent No. 10-0955625

Merchant's Financial Transaction Method and That Equipment

A merchant's financial transaction method and that equipment are commenced. This invention stores the account information of the customer and the double card having the financial transaction function such as deposit and withdrawal function, payment, account transfer, credit card or cash service function and merchant account information, and is configured with the double card to enable the financial function between the merchant account and the customer account through the banks' common network, thereby giving the customers the advantage of being able to conduct financial transactions anytime, anywhere, as well as at an ATM terminal of any bank, further to delivering the effect of enabling financial services at low cost and design.

Core Technologies and Awards



4. Patent No. 10-1205894

Electronic Commerce Method and System Using Personal Page Including the Price Bar Codet

This invention relates to, and includes the following steps of, an electronic commerce method and system using a personal page including a price bar code, whereas the electronic commerce method using the personal page including the price bar code includes the first step of the first user terminal accessing the commodity purchasing website using the wired / wireless Internet network. Whereas, the first user terminal may store the product purchase, as a matter of a step. Transmitting an authentication identifier including a personal identifier, which is a unique number or a phone number of the first user terminal, to the web server providing the web site, as a matter of a step. Comparing the authentication identifier received from the first user terminal with the authentication comparison identifier previously stored in the database of the web server to determine whether the first user terminal is authenticated, as a matter of a step. The web server may authenticate the first user terminal and may include the authentication identifier and the price barcode of the commodity if the received authentication ID matches the pre-stored authentication comparison identifier, as a matter of a step. Transmitting the personal page to the first user terminal, as a matter of a step. The fifth step in which a value-added network (VAN) server receives information from the first user terminal that has scanned the price barcode of the goods included in the personal page of the first user terminal and performs settlement, as a matter of a step. The VAN server requesting the web server to delete the personal page, as a matter of a step. In addition, the seventh step of the web server deleting the personal page.

Core Technologies and Awards



11.2 Program Registration

No. S-2010-002628-3

Augmented Reality Solution

Promotional videos through publications such as guide books, books, and magazines through Augmented Reality using university / company logos, smartphone augmented reality applications, marker or object matching process' augmented reality through easy and convenient enhancement image replacement, when viewed through a web camera in connection with augmented reality, will present 3D videos and interact with videos following the user's behaviors.

11.3 Awards

1. 2016 Excellent Trademark. Design Competition 'Won Prize' (December 1, 2016 Korea Institute of Patent Information)
2. 2012 Republic of Korea Invention Patent Competition 'Won Silver Prize' (November 29, 2012 Patent Office)
3. 2008 Chung-Ang University's Excellent Enterprise Award (December 16, 2008)

Terms



Blockchain: A blockchain is stored in a chain like distributed data storage environment based on the P2P method for the small sized data called “block,” which no one can arbitrarily modify, and is also a data forgery prevention technology based on the distributed computing technology.

Smart contract: A smart contract is a technology that can contract and modify contracts easily and conveniently with P2P without intermediation.

XR (Extended Reality): A term that encompasses augmented reality (AR), virtual reality (VR), and mixed reality (MR), meaning a new form of technology that supports them all..

VR (Virtual Reality): VR means a specific environment, situation, or a technology itself, which is quite similar to the real world created by artificial technology using computers, etc., but which is not real.

AR (Augmented Reality): AR is a computer graphics technique that combines virtual objects or information with a real environment and makes them appear as if they existed in the original environment.

MR (Mixed Reality): MR refers to a technology that interacts with the user by mixing a virtually created information with real world objects, such as computer graphic information, sound information, haptic information, and smell information on a real time basis.

dApp: dApp refers to the decentralized applications. Unlike the existing central server, it means an application running on an underlying platform such as Etherium or Quantum.

Range finder: A camera which connects the distance meter and the focus mechanism of the camera. It is a camera that can confirm whether or not the focus is detected by moving the focus mechanism.

PoD (Proof-of-Discovery): Also called as a proof of contribution, it is an algorithm that selects the influential accounts through the ranking algorithm and receives the tokens as a reward for the block generation.

PoS (Proof-of-Stake): It is a mining method which is mined as a stake of the coins owned by a mining method without a mining machine, called a proof of stake.

Cold Wallet: An offline password wallet that is not connected online. It is more secure than Hot Wallet.

Hot Wallet: It means a wallet of the form stored at an online storage.

Algorithm Flowchart: An algorithm which demonstrates the order of commands through different kinds of boxes and arrows.

Terms



ICO: A method of securing funds by selling virtual currency coins to investors for funding purposes at the beginning of a blockchain-virtual currency based project.

Key Currency: It refers to a currency that is the standard currency used for international settlements or payments or financial transactions.

Ethereum: A distributed computing platform for implementing smart contract functionality based on the blockchain technology.

Big Data: A technology which extracts value from large quantities of data beyond the capabilities of traditional database management tools and analyzes the results

Air Drop: Literally as it reads, dropping something in the air, it is an act of paying virtual currency free of charge. It is mainly intended to promote new coins or secure the users to increase the volume of transactions.

Immersive Experience: Transparency between people-businesses-objects is introduced to mean that the interaction is more adaptive, contextual, and fluid.

HMD (Head Mounted Display): This is a display device to be worn on the head and is also used as a display device for implementing a virtual reality or an augmented reality.

Holo-Lens: This is an electronic device developed and released by Microsoft and is an augmented reality based HMD augmented reality device.

EGD (Eye Glasses-type Display): This equipment is one through which one views virtual objects by mounting it onto one's face.

Smart glass: One of the wearable devices, it is a computer device in the form of glasses.

Front-end: The screen shown to the users is collectively called the front-end (website, application, etc.).

Back-end: It is called the back-end, which is the server, or the rear side of the program, or the front-end's functional areas.

Location marketing (proximity marketing): It is a type of marketing that provides supplementary services by locating the users by using GPS, NFC, etc. of devices.

Range Finder: This is a method of making objects with 3D by receiving data from shooting lasers.

Low Polygon: This is a method of applying low polygon, which is a smallest unit used to express 3D graphic, to modeling.

Terms



Content Management System (CMS): A management system that can create, delete, and publish contents.

Motion to Photon (MTP): The time difference, or delay time, updated between motions and the screen.

Room-scale: It means a method of transferring the space of reality into a virtuality as it is.

IPD (inter-pupillary distance): It means the distance between pupils and also means the distance between the center of the pupils.

Near Field Communication (NFC): A non-contact wireless communication technology which is capable of exchanging data within a distance of approximately 10 cm by using a frequency of 13.56 MHz band.

OTP (One Time Password): It is a user authentication method which uses a one-time password of a random number that is randomly generated.

Single Sign On (SSO): It means a system which allows multiple services to be accessed with a single login.

SOTP (Save One Time Password): It means a method of providing the one-time password which is stored every time one accesses the online site.

Virtual Private Cloud (VPC): VPC is a virtual network which is logically separated from other virtual networks in the Cloud.

Distributed Ledger Technology: Distributed Ledger Technology refers to a transaction detail technology which distributes a large quantity of data to a large number of computers.

Terms

Node.js (Server-side Language): It is a software platform used to develop scalable network applications (particularly, server-side), which is commercialized in consideration of scalability within the application..

RESTFUL API: It refers to a network-based communication method which can take maximum advantage of the web.

Mining Internal Interface: A module responsible for processing inside a mining related system

Camera calibration: It is a correction made for the camera to effectively capture the subject by performing operations such as position, angle, and movement of the camera.

Six degrees of freedom: Six degrees of freedom refers to the six directions of movement. Frequently, among the six degrees of freedom in robotics, the three degrees of freedom are Position, and the other remaining three degrees of freedom are called "Orientation."

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