



# **ESRCOIN** **WHITE PAPER**

이에스알코인 백서

VER 2.0

<http://esrcoin.biz>

# Whitepaper Contents

1. ESR Coin	02
1.1 Objective	02
1.2 Summary	05
(1) What is ESR Contracts?	05
(2) Cryptocurrency Concept	05
(3) ESR PAY SYSTEM	06
(4) ESR PAY SYSTEM's Objective	08
(5) Pow → Pos Conversion	09
(6) Future Technical Support	10
1.3 Introduction of Cryptocurrency	11
(1) Background	11
(2) Proposal	13
1.4 Cryptocurrency Comparison	15
(1) Summary	15
(2) Background	15
(3) Development	15
1.5 Consensus Algorithm	17
(1) Summary	17
(2) FBA(Federate Byzantine Agreement) Consensus Algorithm	18
1.6 Coin Issuance	19
1.7 ESR Coin Trade	20
2. Conclusion	21
3. ESR Coin Specifics	22
4. Roadmap	23
5. Team	26
6. Others(Legal Considerations, etc.)	28

# 1.ESR Coin

## 1.1 Objective

The modern distribution market is rapidly entering the era of electronic commerce with the borders collapsed due to the activation of the e-commerce market.

The distribution until now is changed in the revolutionary way and the patterns of consumption are globalized and individualized, and now competition is not only for one country but also for the world.

ESR Coin builds an optimized global shopping mall, ESR platform, in the global online market where e-commerce takes the lead in building a network system that is unique in the global e-commerce market by building a strong marketing system that integrates ESR Coin with the global market, Blue Ocean, and it is the fastest encryption currency available in real life.

With its various technologies such as merchants, ATM devices and online payment, users can use the convenience and assets as a commodity to lay the foundation where they are available in real-life.

- 1** ESR Shopping Mall is an e-commerce platform created to introduce excellent products produced by small and medium-sized enterprises in Korea to the world. It is operated in the form of memberships and has established branches and corporations in 12 countries and regions, and ESR Coin is introduced into the payment system and used as a payment method.
- 2** ESR Platform : ESR platform is a platform that provides services by integrating real estate, travel, rental, delivery, communication, mutual aid, finance, entertainment, lodging, medical care, and beauty fields. ESR Coin is used as a payment method.
- 3** ESR Graphene : ESR, which has been focusing on the development of new and eco-friendly materials since 2010, has researched and developed products in the field of graphene-based nano-materials and ultra-lightweight and high-strength composite materials, and through this research, is already a leader in the application of graphene-products. ESR is a strategic partner with the Russian Institute of Technology.

# 1.ESR Coin

## 1.1 Objective

ESR Graphene, Inc., pioneering new areas with graphene that will dramatically change the future life, will become the New mainstream of the Fourth Industrial Revolution.

- 4 EB Point : EB Point has developed the EB Point which can be utilized equivalent to cash as a global sharing economy platform, and actively promotes the franchise business to increase the scope of use of ESR Coin and support income generation through consumption by global members.

As shown above, the purpose and scope of use of ESR Coin is increasing over time due to the business strategy and achievement of the ESR headquarters.

Therefore, there is no coin that can be used right now and completely protected in the real world, and the future of coins without these uses will lead to the de-listing.

Users have a lot of concerns, such as the loss of a smartphone or the loss of a password in a personal wallet, and are storing cryptocurrency. In fact, it is one of the accidents that are frequently occurring when users cannot use or regain their cryptocurrency for reasons such as loss of an electronic wallet device and deletion of a wallet.

ESR Coin provides a 6-digit Pin and a 12-word paper key. It is a coin with all the security and convenience of use, such as entrusting an asset to a bank from problems such as loss of an electronic wallet device or deletion of a wallet.

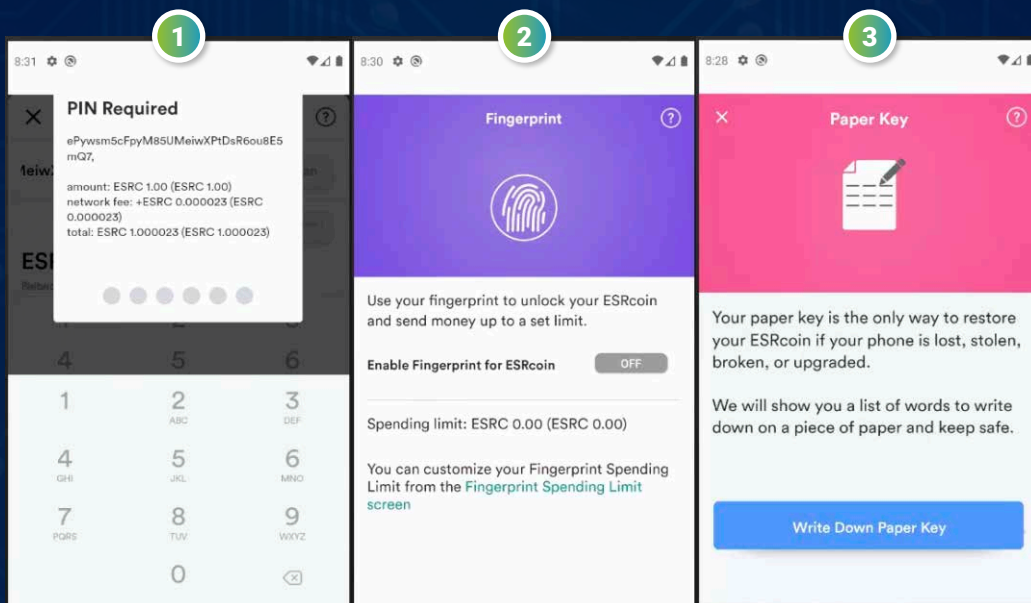
ESR Coin is a self-evolving decentralized cryptocurrency with light blockchains and real-life coins with transfer speeds of 30 seconds or less. The blockchain of the ESR coin is complemented with the block coin of the existing Bitcoin, so that it operates as a lighter and faster block.

In addition, it has a fast transfer rate among cryptocurrency, so it is a cryptocurrency that can be used as money in real life. ESR Coin offers a wallet that supports a variety of devices. ESR coin wallets can be used on any operating system worldwide, including smartphones as well as PCs (Windows).

# 1.ESR Coin

## 1.1 Objective

### ESR Coin Wallet Security Process



- 1 Primary security with PIN code entry
- 2 Secondary security through fingerprint recognition
- 3 Provides 12-digit paper key, enables you to recover and protect your wallet from accidents such as loss of electronic devices and purse purge

# 1.ESR Coin

## 1.2 Summary

### (1) What is ESR Contracts?

A contract that runs securely based on a protocol called Blockchain.

Bitcoin, Ethereum and many other virtual currencies are virtual currencies that can not be used in real life due to the slow transfer rate. The ESR coin, which is the lightest and fastest blockchain of virtual currency, is a virtual currency that can be used in real life.

### (2) Cryptocurrency Concept

**first.** Reliability from risks such as hacking and counterfeitin

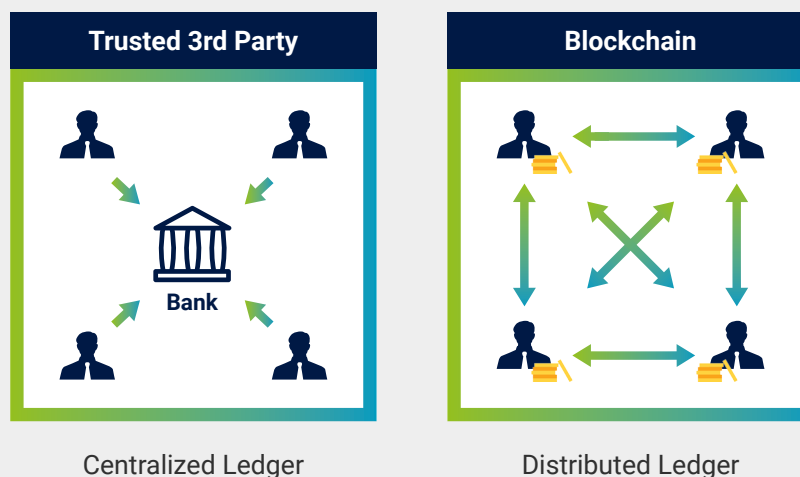
**second.** Quick transfer (billing) speed

**third.** Stability of property preservation

**fourth.** Do you have a franchise that you can use in your life? And so on.

ESR Coin is a coin that can be used in real life with all four requirements met. It is an offline merchant that can use ESR Coin, a blockchain where hacking and counterfeiting are not possible at all, a transmission speed of less than 30 seconds, And security that can be stably stored is applied.

## Password Currency Trading





# 1.ESR Coin

## 1.2 Summary

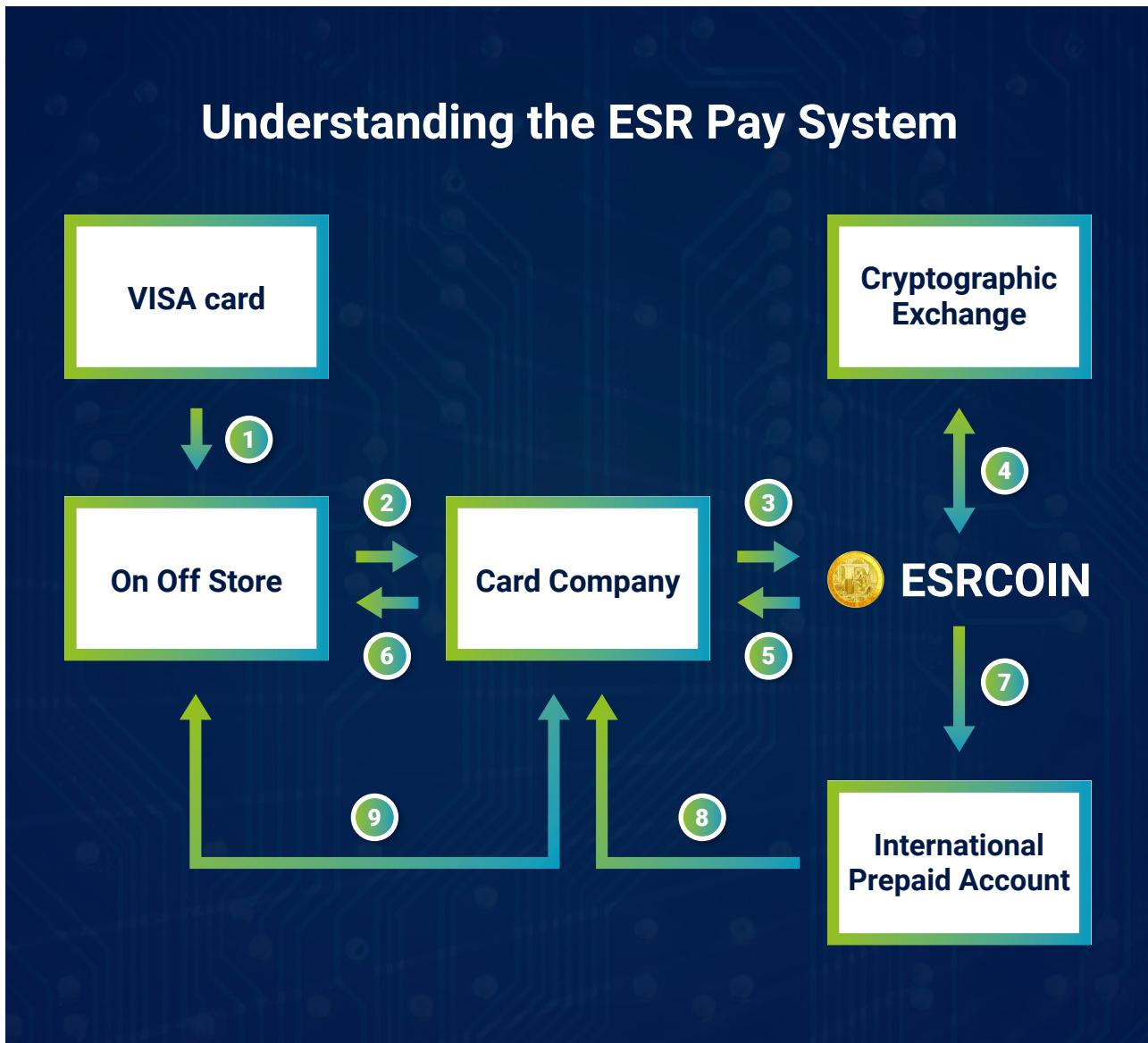
### (3) ESR PAY SYSTEM

The ESR Coin Technical Team has developed ESR Pay System, which is easy to use anywhere in the world, in connection with ESR members passbook and Visa card. With the goal of using ESR Pay system in September 2019, Beta test is in progress.

- ◆ System that provides convenient Wallet function by displaying real-time balance and exchange rate, outputting QR code of users account.
- ◆ IC chip card that safely provides multi-cryptocurrency payments for a wide use in accordance with the financial standards.
- ◆ Support secure settlement security mode for payment only when connecting with ESR Coin electronic wallet.
- ◆ QR code function for password exchange wallet address for P2P transmission.
- ◆ ESRCoin exclusive electronic wallet 6 digit PIN code support security enhancement.
- ◆ Available worldwide as it is linked to ESR PAY visa cards.

# 1.ESR Coin

## 1.2 Summary







- 1 Select the password, check the exchange rate
- 2 Approval Request
- 3 Request Balance Check
- 4 Confirm whether there is cryptocurrency balance or not
- 5 Request for prior approval



# 1.ESR Coin

## 1.2 Summary

-  Payment completed
-  Payment COD Money deposit after local currency
-  Deposit amount approved
-  Local currency settlement

### (4) ESR PAY SYSTEM's Objective

Cryptocurrency has opened the ground for innovative business solutions as transparent, secure and distributed monetary technology becomes available. Through this, many companies have created tremendous wealth and groups that are tied to cryptocurrency.

However, it is difficult and inconvenient for the cryptographer to use the cryptogram in real life, and the process of transfer and exchange is complicated and slow.

Many companies have begun to solve practical usability problems. However, while seemingly approaching by using a logical cryptographic solution, use cases are limited to only a few cryptographic transactions and only a small number of merchants accept cryptographic transactions.

In response, by linking the "money" approach, which is the basic purpose of cryptocurrency, to VISA cards, not to each franchise, ESR developed ESR PAY SYSTEM to access the franchise that accept VISA cards, and make it usable anywhere VISA card is available. ESR provides users an innovative experience and solves the usability problems of existing cryptocurrency.

# 1.ESR Coin

## 1.2 Summary



### (5) Pow → Pos Conversion

Bitcoin uses the SHA-256 method to create a nonce, a random number that increases by 1 until it finds a hash value that satisfies the condition. The more computing power, the more favorable it is to mining. This mining organization is called a mining pool, and the problem is that if mining pools from global mining companies are combined to occupy more than 51% of the total network computing power, there is a risk that Bitcoin's security may collapse.

In order to solve the above problems, PoS and proof-of-stake create blocks through stakes that they have, not computing power, so that computing power and power waste can be avoided.

# 1.ESR Coin

## 1.2 Summary

### (6) Future Technical Support

The ESR Coin Technical Team is always taking the ESR Coin block chain and all source code into public, and is constantly developing and upgrading them for the development of the encryption currency. Whenever there is any successful result, they are making it public to lead the researchers as well as crypto currency and 4th industrial revolution.

# 1.ESR Coin

## 1.3 Introduction of Cryptocurrency

### (1) Background

Blockchain was first conceptualized in 2008 by Satoshi Nakamoto's paper "Bitcoin: A Peer-to-Peer Electronic Cash System" and implemented as Bitcoin's core technology the following year.

- 1 Bitcoin uses blockchain technology as a financial transaction ledger where individuals publicly record money transfer information. Bitcoin is the first example of using a blockchain to solve a double payment problem.**

Despite the lack of a centralized manager, Bitcoin has successfully supported more than 200 million peer-to-peer transactions and is now achieving a market cap of over 300 trillion won.

Following the success of Bitcoin, a number of systems have emerged that use blockchain technology.

Hundreds of ciphers are currently in competition, and according to a recent IBM report, over 90 of banks are now investing in blockchain technology.

- 2 Although currency trading is the most common application program of block-chain technology, Many groups attempt to manage other digital assets, such as financial products and services, logistics information, property ownership, and identity information by using Block-Chain technology. In 2016, the encrypted currency Ethereum received a lot of attention.**

Ethereum "is a blockchain with a full-fledged Turing-complete programming language that can be used to create contracts"; that can be used to implement arbitrary state transformation functions and aims to provide Smart Contracts to the blockchain.

# 1.ESR Coin

## 1.3 Introduction of Cryptocurrency

The goal is to allow the user to use any kind of program (or contract) in a block chain. Like Bitcoin, Ethereum uses a blockchain and a consensus mechanism to ensure that if a malicious node attempts to falsify the contract, the fake contract is eventually removed from the blockchain. Bitcoin completely guarantees the amount of bitcoin transferred between accounts.

Similarly, Ethereum must also ensure the integrity of the executed contract. Smart Contracts has the potential to become a paradigm shift in de-centralized application development.

You can run the same logic anywhere, even if the program is not on the centralized server. Smart Contracts can be used for projects such as decentralized markets, currency trading platforms, and Golems for the purpose of developing a decentralized global supercomputer.

However, the freedom and flexibility provided by the Turing-complete language on which Ethereum is based is a source of some serious problems. Ethereum attempted to overcome this problem by applying the cost (gas) for the calculation work.

However, problems inherent in the language itself used to develop and run Smart Contracts have inevitably created a series of security vulnerabilities and caused failed projects such as The DAO.

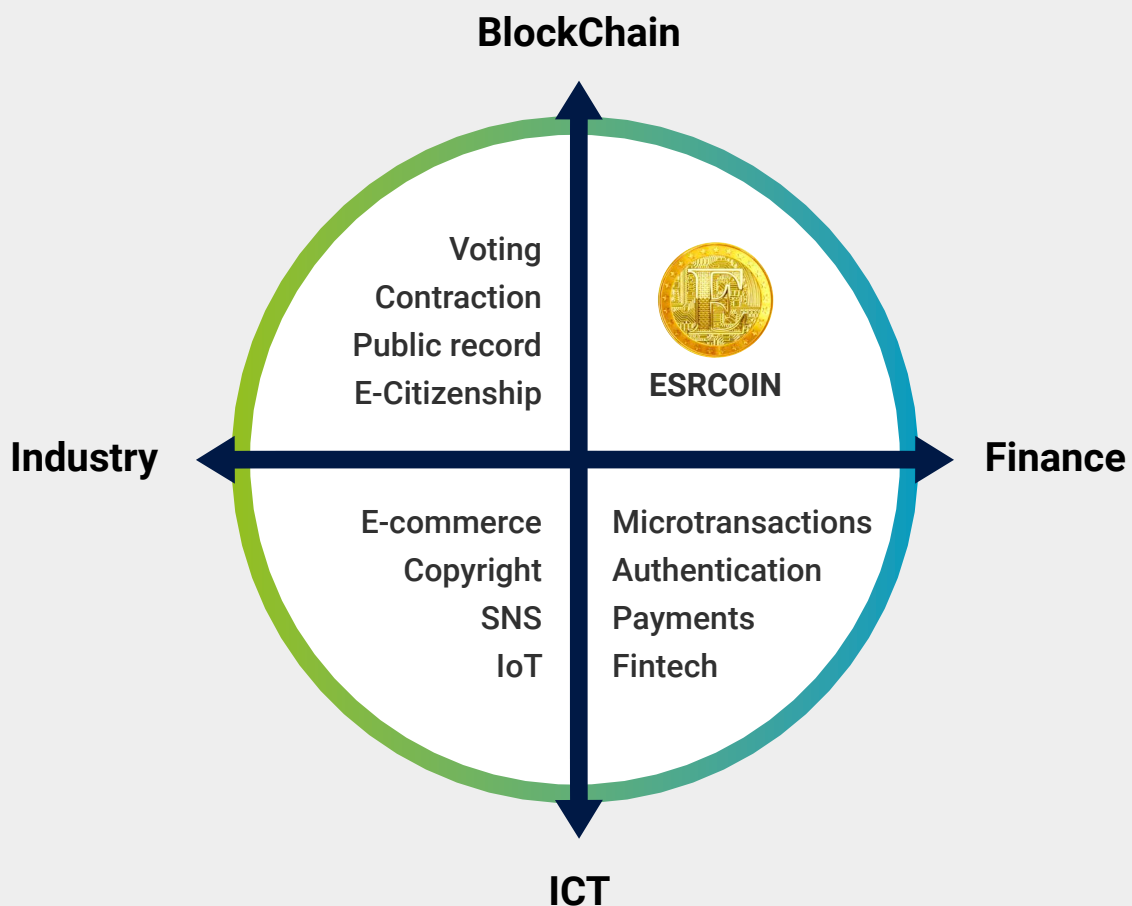
# 1.ESR Coin

## 1.3 Introduction of Cryptocurrency

### (2) Proposal

The ESR coin aims to develop a platform to complement the shortcomings of existing virtual currencies and take advantage of its strongpoint to enable smart contract IOT as well as the coin, as the real money, to be used in real life.

### Application of blockchain technology





# 1.ESR Coin

## 1.3 Introduction of Cryptocurrency

In addition, through ESR Coin, we are trying to solve common repetitive problems with cryptocurrency. Decision-making and decentralization systems lack a systematic decision-making process.

In the world of cryptocurrency, there were cases where there were various problems such as the confusion due to the absence of the decision-making process, significant financial loss and etc.

Through these proposals, ESR Coin has prepared a significant amount of public budget that can be used to develop the entire ESR Coin ecosystem.

Algorithm for Centralization Prevention. Cryptocurrencies such as Bitcoin, which use only a PoW-type consensus protocol, are experiencing problems arising from the inability to separate economic incentives and political incentives.

To solve this problem, we will bring in tens of millions of servers from around the world to the PoW, leading to a stable agreement. By purchasing a large number of mining equipment, users can increase the control (political aspect) of the block chain and at the same time increase the mining import(economic aspect).

ESR Coin overcomes this problem by using a consensus mechanism that separates economic incentives and political incentives. To gain political power or financial resources, invest in systems.

The user can increase the number of votes by increasing the number of nodes or the user can maximize mining income by investing in deposit compensation and block generation compensation (rewards given in proportion to the amount of coins tied to the node).

In addition, the agreement protocol used here is energy efficient and faster.

Application ecosystem. In many cases, decentralized money tends to become a hotbed of speculation due to limited real usage. We believe that monetary value is essentially linked to the fact that money is being used, so the ESR Coin team will launch a variety of applications that use ESR Coin.

# 1.ESR Coin

## 1.4 Cryptocurrency Comparison

### (1) Summary

ESR Coin wants to use powerful PoW, PoS technology. The architecture is designed to extend the power of expression while maintaining determinism to support the safe and accurate execution of contracts, based on the stable algorithm Script hash algorithm.

### (2) Background

There are two basic approaches to developing contracts in the blockchain.

One is to use a flexible programming language on a virtual machine and the other is to use a domain-specific language that is somewhat less flexible but deterministic.

The ESR Coin team chose the second method. Unlike cryptocurrency based on virtual machines, the reasoning engine is based on Semantic Web technology, so it can infer information from code before it is executed. The contract has the possibility of determination, and the outcome of the contract is clearly confirmed.

This is a key concept in building a secure, sustainable currency with contract functions. Ethereum has applied the pricing to complexity to solve this problem using market mechanisms, but we believe that tighter OWL and TAL approaches will provide a safer environment for developing blockchain-based contracts.

### (3) Development

When developed based on standard Web technologies such as JSP, PHP, HTML, HTTP, HTTPS, RDF, PY, Javascript, and OWL, which are used to provide Web pages, As shown in FIG. Both OWL and RDF can be used to create an unambiguous, structured data classification scheme. Using these characteristics, we proposed the concept of ESR Contracts, which is a contract associated with all of the payment systems.

Although OWL and RDF have similar characteristics, the RDF standard does not currently support P-Time completeness. However, using Reasoners, a tool to deduce logical results from a set of previously presented facts or axioms, OWL standards ensure P-TIME complexity.

# 1.ESR Coin

## 1.4 Cryptocurrency Comparison

This means that the time it takes to execute the contract can be determined in advance. This is a key reason why OWL was chosen as the base language for Peace Contracts. OWL DL (Description Logic) is a sub-language of OWL. "It is designed to provide the maximum expressive power possible while maintaining the completeness of the calculation."

# 1.ESR Coin

## 1.5 Consensus Algorithm

### (1) Summary

The consensus algorithm is the core of a blockchain-based currency or system. The algorithm tries to answer the question “How can I prove that all distributed databases have the same set of information?” ESR Coin decided to use a modified FBA (mFBA) agreement algorithm based on Stellar’s agreement protocol (FBA) for this question.

### Consensus Algorithm Comparison

Mazieres defines the core function of the FBA protocol as follows.

- ◆ Decentralized control. Anyone can participate and achieve consensus without the permission of the central manager.
- ◆ Low latency. A node can actually arrive at an agreement between the time a person actually waits for a web or a payment transaction (e.g., up to a few seconds).
- ◆ Flexible trust. The user can freely select a combination that is considered appropriate. For example, even a small non-profit organization can play an important role in ensuring that larger institutions maintain their trust.
- ◆ Asymptotic security. Security depends on digital signatures and hash families, which can be realistically adjusted to protect against adversaries with enormous computing power.
- ◆ Decision-making function. Voting functions related to voting and operations It is included as an additional function in the locale.

# 1.ESR Coin

## 1.5 Consensus Algorithm

### (2) FBA(Federate Byzantine Agreement) Consensus Algorithm

Bitcoin's consensus mechanism and traditional Byzantine-based protocols must be unanimously agreed by all network participants. However, the FBA does not require all participants to unanimously agree, and in addition each node can choose which node to trust.

This enables faster growth while enabling organic growth without losing the integrity of the financial network. The FBA has implemented a mechanism whereby nodes can unanimously agree by forming a group with a team (quorum). Once the transaction is made, information is sent to everyone in the group.

Instead of waiting for the entire network to agree on the data state, if the node hears enough messages from the trusted node a sufficient number of times, the node assumes that the information is correct. When nodes overlap or loose node associations occur, they will create different nodes with different teams that agree on the same transaction.

This leads to a system-wide consensus without unanimous consent for each transaction block.

# 1.ESR Coin

## 1.6 Coin Issuance

- ◆ Confirmation Rewards: Confirmation rewards are monetary rewards that are paid to a node at random for a published block (every 30 seconds).

As compensation is distributed randomly, as the number of nodes increases, the probability of one node getting compensated decreases.

- ◆ Low latency. A node can actually arrive at an agreement between the time a person actually waits for a web or a payment transaction (e.g., up to a few seconds).



# 1.ESR Coin

## 1.7 ESR Coin Trading

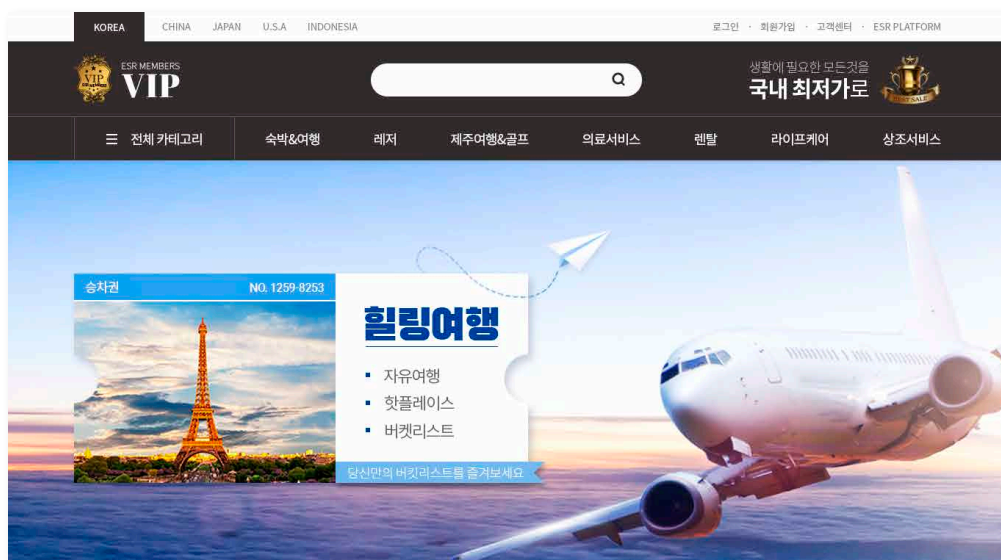
ESR Coin is used as a main payment method in ESR platform of global shopping mall. ESR Coin can easily purchase and sell on various international currencies through convenient buy and sell options at international cryptocurrency exchanges.

In addition, an international exchange is being established in Laos, Thailand, Singapore and the Philippines, and it will be used as a major transaction base coin for 10 ASEAN countries.

We will build a new global business system that will lead the global online e-commerce market and integrate the world into one based on the worldwide ESR platform.

In particular, ESR Pay provides an optimized solution for the payment sector of unattended settlement systems, which is the key to automation in the distribution sector.

## Global Shopping Mall ESR VIP Mall



## 2. Conclusion

This means that the time iThe ESR Coin team aims to overcome the technical and operational problems inherent in various cryptocurrency. PoW aims to create value for coins while curbing the centralization of power.

The Scrypt hash algorithm enables energy-efficient and fast transactions.

The ESR coin blockchain will provide the lightest and fastest framework with determinability and accessibility to generate and execute the contracts above.

The ESR Coin team is aiming to achieve these goals while leveraging the security and integrity that can be achieved with blockchain technology.

ESR Coin strives to provide the solutions for the problems above and be a crypto-currency with real life utilizations.

# 3.ESR Coin Specifications

## ESR Coin Technical Specification

Coin Name	ESR Coin
Coin Abbreviation	ESRC
Coin Type	Pure PoS
Hashing Algorithm	scrypt algorithm
Time Between Blocks	30 seconds
Block Reward	0.01
Premine Amout	72,000,000 (50%)
Total Coins	144,000,000 Ea
Coins Generated Per Day	7,200Ea
Total Block	28,800,000 Block

\* PoW to PoS Conversion

## 4.Roadmap

---

### 2016

- 03 Established global e-commerce system Nudge G1 Mall
- 04 Development of ESR coin, joint venture between Korea, the US and Japan
- 05 E-commerce partnership with China and Thailand
- 08 Established the world's first video commerce platform
- 12 BIT ESR established as a global reverse direct e-commerce corporation

---

### 2017

- 01 Established global integrated e-commerce system W1 Mall
- 02 Started to build a global integrated marketing system RPS
- 11 Completed the development of the world's first global RPS computing system
- 12 Launched cutting-edge payment coin ESR coin

---

### 2018

- 02 ESR Coin payment started at W1 Mall of global e-commerce
- 03 Listed on the international exchange C-CEX
- 04 Listed on the Korea Exchange COINCHEL  
Listed on the international exchange MYCRYPTOEXE
- 08 China, Indonesia, Vietnam, Thailand branch established
- 09 ESR Foundation established
  - ◆ Global leaders participate as members
  - ◆ ESR business revenue distribution
  - ◆ Welfare projects: school, hospital establishment, poor, socially underprivileged
- 10 Global e-commerce W1 Mall sales reached 10 billion won
- 12 Laos international cryptocurrency trading system beta version released

## 4. Roadmap

---

### 2019

- 01** US branch established
  - 02** Launched EB Point, a global sharing economy platform
  - 03** Laos International Exchange open  
Established branch offices in China and Japan
  - 11** ESR Pay released
  - 12** W1 Mall / ESR Coin/ ESR Pay linked W1 ESR Mall open
- 

### 2020

- 03** ESR Graphene Graphene-based nano materials and ultra-light high-strength composite materials business launched
  - 05** Interworking with VAN / POS companies  
Released EB Point Merchant Business System Version 2
  - 06** Joined as a member of Korea Blockchain Association  
ESR International Cryptocurrency Exchange opened
  - 07** Global finance/communication/education/travel/entertainment business activation
  - 11** Support for international organizations such as UNICEF
  - 12** ESR Graphene IPO (Initial Public Offering) in Korea
- 

### 2021

- 02** ESR Graphene IPO (Initial Public Offering) in the US and Thailand
  - 03** Graphene textile, paint, lubricant, construction materials business activation
  - 04** Established international cryptocurrency exchange in Singapore and Thailand
  - 05** Achieved 1,000 EB Point affiliates
  - 10** Achieve 10 million ESR e-commerce platform members
-

# 4.Roadmap

---

**2022**

- 02** ESR Graphene IPO (Initial Public Offering) implemented in Japan
  - 05** Established branches in India, Mexico, Middle East, Brazil, Argentina, Peru and Chile
  - 07** International cryptocurrency exchange established in the United States
  - 09** ESR Global Social Welfare Foundation established
    - ◆ Donation and business participation to solve epidemics, hunger problems, etc.
    - ◆ Support for international organizations and global volunteer organizations
    - ◆ Welfare projects: Supporting schools, hospitals, poor and underprivileged in underdeveloped countries
-



# 5.Team

## Responsible Developer : Chairman, Honggyun Lee

### Brief History

- ◆ Born in 1961
- ◆ Completed GCA course at College of Education, Seoul National University
- ◆ Sales Director, Hansung Life Insurance Co., Ltd.
- ◆ Chairman, Winpia Co., Ltd.
- ◆ Chairman, ESR Holdings Inc

Based on the long experience of the distribution industry, he can actively respond to the flow of the distribution market with creative and innovative ideas in the field, and suggest the practical direction of the coin market in the future.

## Project Manager : System Analyst, David Ryum

### Brief History

- ◆ Born in 1960
- ◆ MBA, Hankuk University of Foreign Studies
- ◆ Worked in Sambo Computer Inc. (System Analysis / Development)
- ◆ International Unix Systems Analyst
- ◆ Served as policy advisor to the Ministry of Information and Communication

# 5.Team

## System Engineer and Development : Byeongcheon Min

### Brief History

- ◆ Born in 1971
- ◆ Graduated from the computer science department of Daejeon University
- ◆ Working with the Tax-collection Team at the National Tax Service's Data Management Office
- ◆ LG CNS, LG Chem Research Institute
- ◆ Developed Next Generation Financial Internet Banking in Shin-Hyeop's cooperative union
- ◆ PM for Integrated CRM project of the Korean Intellectual Property Office
- ◆ Navy ASTT strategic strategy training system management

Based on the long experience of the distribution industry, he can actively respond to the flow of the distribution market with creative and innovative ideas in the field, and suggest the practical direction of the coin market in the future.

## ESR Blockchain Institute

The ESR Blockchain Lab is a team of experienced engineers, blockchain specialists, distribution specialists, programmers, experienced marketing professionals and business experts who are committed to innovating future technologies and making a better life.

## 6. Other (legal considerations, etc.)

This is a summary of the legal considerations, risks and disclaimers that must be read in advance.

I have written this white paper to provide more specific information to those who have a lot of interest and affection for the ESR platform. Therefore, this White Paper is not intended to be an invitation to invest in ESR Coin or Platforms, and it has nothing to do with it.

In addition, the ESR team does not guarantee that any white papers, including conclusions, are accurate up to the future, as this White Paper was written at the time of writing. The ESR team makes no representations or warranties of any kind with respect to this white paper, and assumes no legal responsibility for it.

For example, the ESR team

- 1 whether the white paper is based on legitimate rights and does not infringe the rights of third parties,
- 2 whether the white paper is commercially valuable or useful,
- 3 whether the white paper is appropriate for the specific purpose you have,
- 4 does not guarantee the contents of the white paper, and so on.

**If you use this white paper in your decisions and actions (including, but not limited to, based on white papers), the consequences thereof will be no excuse for imputation regardless of profit or loss.**