

# White Paper

LLG - Blockchain Gaming Platform

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[luckyeos.io](http://luckyeos.io)

## **Abstract**

'LLG' is building a world first blockchain based, providing the most innovative, transparent and fairness gaming platform. We offer a fully distributed, feeless, trustless, and permissionless gaming architecture, allowing users to place bets in EOS at no cost and have guaranteed fairness. Our LLG token allows holders to receive dividends from game profits and serves as 'shares' for our decentralised gaming platform. The 'LLG' team has extensive experience in the blockchain field and has already developed several popular DApps on EOS network. 'LLG' trail blazed into a new world where traditional online gaming companies and real world casinos simply can not compete with, because of friction fees, lack of trust and censorship-resistance, and an inability to scale and provide a fun player experience.

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# 1. Introduction

Our team has been deeply involved in the blockchain space for many years. But with previous generation of blockchain like Bitcoin or Ethereum, the scalability and fee problem have been the barrier until EOS came to live. EOS blockchain removed the need for central parties or trusted intermediaries when exchanging value and provide a secure, immutable ledger of all transactions, we set out to build a trust-less and permission-less gaming platform, one that handed power, control and trust back to the user. Our goal is to take the essence of what people love about gambling—the thrill, excitement, and ability to quickly hop online and play entertaining games—and strip out everything we hate about the industry—greedy and often shady companies, intrusive sign-ups, high house edges, and poor player experience.

'LLG' fills a significant gap in the \$50 billion-dollar online gambling market: despite no shortage of blockchain casino ICOs, there remains no decentralised casino that is actually fun to play or commercially scalable. Tired of all the exit scams and product-less companies, we quickly built two proof-of-concept games on the Ethereum network. These games were huge hits, racking up tens of thousands of plays and consistently ranking us as a top 3 gambling site on various Dapp lists. These games also highlighted the limitations of the Ethereum network and served as a springboard for our move to EOS.IO, a blockchain we believe is powerful and scalable enough to meet our ambitions. In addition to popular table games like Blackjack, Roulette, Craps, and Video Poker, we also plan on developing some innovative and unique game concepts, especially in the multiplayer space.

We've been a community-driven project from the start, which is another reason why we've opted to share game profits and decision-making power with holders of our LLG token, rather than require an unnecessary platform-specific token for betting.

'LLG' is on track to become the primary casino and one of the first commercially successful projects on EOS, and we aim to be the largest cryptocurrency gambling platform in existence. Join us as we build the world's first truly trustless, permissionless, and high-performance casino!

## 2. Market Overview

### 2.1 Gambling Industry at a Glance

At roughly half a trillion US dollars the global gambling market is massive. Online gambling constitutes an increasingly large percentage of this industry: in 2017, the online gambling market was over US \$50bn and is expected to reach over US \$81bn by 2022.<sup>1,2</sup>

The early days of bitcoin saw a number of bitcoin gambling websites popup. Not long after, various online casinos began accepting bitcoin or other cryptocurrencies on their centralised platforms. Since 2014, over 3.7m BTC has been wagered online, equating to around \$US30-40 billion in today's prices. These figures are only expected to grow, especially as cryptocurrencies continue to gain mainstream appeal and acceptance.

The demand for transparent, fairness has grown concurrent with the advance of technologies that enable the change. The distributed, decentralised nature of blockchain technology offers tremendous opportunities for gambling industry. A blockchain casino built based on EOS blockchain would use its {randomisation smart contract} and operates autonomously, and its data and records would be cryptographically stored in a public, decentralised blockchain to provide total transparency and fairness in gaming.

### 2.2 Problems with Traditional Online Casinos

Legacy online casinos suffer from a number of drawbacks that make their usage undesirable:

#### **Problem 1: Difficulties with deposits and withdrawals**

Traditional online casinos are notoriously unreliable when it comes to cashing in and cashing out. Here is a small sample of common issues:

- Deposits are not credited correctly
- Bonuses or rewards never show up
- Users can only withdraw a small amount of money or only withdraw on certain days
- Users are forced to jump through numerous hoops in order to withdraw
- Predatory conditions exist such as hidden or high withdrawal fees

***We offer instant withdrawals and deposits. Our website will conveniently integrate with Scatter and standard wallet protocols, which allows player send and received EOS, and interactive with our smart contract seamlessly.***

## **Problem 2: Games are not verifiably fair and sometimes outright rigged.**

Over the past decade there have been countless instances of game results that have been inconsistent with randomness. For example:

- 2007: Absolute Poker discovered to have stolen (from rigged betting) \$1m over a 2-week period
- 2012: SkillOnNet software, used in over a dozen popular online casinos, found to be inconsistent with statistical norms
- 2013: Reel Deal and Hi/Lo Gambler found to be running a coin flip game advertising a 100% payout to players, while the true payout was 96%
- 2015: AmigoTech's results consistently not falling within statistical norms
- In addition, multiple sites have been discovered to have been hiding profit from investors

The Wizard of Odds—the go-to website for online casino information—has blacklisted over 60 gambling sites, a figure that only accounts for the most unethical offenders.<sup>3</sup> Unfortunately, there is no shortage of shady online casinos.

### ***How 'LLG' solves this problem:***

***Every element of our platform, including all our games, is fully transparent and verifiably by anyone. Our source code is on GitHub page and have been audited by multiple independent parties before full release. Our games are immutable smart contracts operating on the EOS.IO blockchain, fully viewable beforehand and entirely verifiable during and after gaming sessions.***

## **Problem 3: Burdensome sign-ups and verification**

Centralised online casinos require users to create accounts and submit intrusive personal information like utility bills and passport scans. This is often a very time-consuming procedure and a substantial barrier to user adoption. Some sites take days and even weeks to verify these documents. Often, this is only triggered when a user requests to “cash out” in order to dissuade this action and to keep the users money on the casino site.

Many users prefer to play privately, without the spectre of their personal identity being tracked to their gambling activity.

***How 'LLG' solves this problem:***

***We will not ask for any personal information and there's no registration process needed. If you have an EOS account, then you are ready to play the game.***

#### **Problem 4: Platforms are highly centralised**

Centralised systems control operations and the flow of information from a single point. Under these systems, all players are directly dependent upon a central power to process information, ensure fairness, keep games running, and pay out winnings to players or investors. As seen above, central authorities frequently fail at these tasks, sometimes due to negligence, but more often than not, due to malice and greed. Industries where trust and transparency are of critical importance are ripe for disruption by decentralised technology. This is especially true for an industry like online gambling, which has undoubtedly earned its shady reputation. The possibilities of your casino operator opening an account to play against the bank in order to drain funds from investors or absconding to Panama with all the house money are not the only risks you undertake by using a centralised platform. By nature, centralised systems are inadequately fault tolerant and attack resistant. Traditional online casinos have sensitive central points that can be attacked at a much lower economic cost than those of decentralised systems. 74% of Bitcoin gambling websites experienced a DDoS attack in Q3 of 2017, and the online gambling industry as a whole accounted for 34.5% of worldwide DDoS attacks.

***How 'LLG' solves this problem:***

***Operations take place on the EOS.IO blockchain, an entirely distributed and censorship-resistant network. We utilise a decentralised governance system and put decision making in the hands of our users and token holders.***

## 2.3 Problems with Current Blockchain Casinos

There has been no shortage of blockchain-based casinos or casino platforms popping up over the past few years. Some are much better than others, but all of them suffer from one or more of the following problems:

- Burdensome and invasive sign-up procedures
- Require players to purchase, store and use unnecessary platform-specific tokens in order to play
- Boring, stale games
- No functioning products or prototypes, even well after multi-million dollar ICOs. The few games that do function on the Ethereum network are extremely limited in functionality and user- experience.

As will be seen in the next section, 'LLG' addresses each these problems.

## 3. Why EOS.IO?

Our requirements

Before choosing a blockchain platform for to build upon, our team laid out a list of requirements. It had to:

- Be suitably decentralised and distributed
  - Meet or exceed mainstream performance standards and process thousands of transactions per second (tx/s)
  - Allow users to play for little or no cost, and allow the house to cover transaction fees of the users (if any)
  - Have the ability to scale to millions of users and host 50+ separate games
  - Respect user privacy and allow for anonymous betting
  - Be completely transparent, auditable, and offer provably fair gaming
- Developing a large-scale commercial-grade platform is a substantial commitment and necessitated we spent ample time conducting due diligence on the proper system to build upon. We began obsessively researching different blockchain platforms, seeing how they aligned with our requirements, and building various



small-scale decentralised applications on them (Dapps). After nearly a year of attending conferences and meetups, diving deep into technical whitepapers, and spending hundreds of hours researching existing online gambling sites, we determined that EOS.IO was the best infrastructure to build upon.

### EOS.IO is Maximally Scalable

This feature is of critical importance for any blockchain system, as application developers wish to grow and scale their project. In order to usurp billion-dollar legacy online casinos like Paddy Power Betfair, William Hill, and Playtech, the 'LLG' platform must be able to handle thousands of transactions per second (tx/s) and hundreds of games.

At present, Ethereum is restricted by the single threaded performance of a CPU. Early test networks witnessed ~25 tx/s, but real-world performance on the network is closer to ~10 tx/s or less. To put that into perspective, a typical exchange executes 100,000 trades per second, and Facebook processes 52,000 requests per second for likes alone.<sup>6</sup> In the past, the Ethereum network has been overloaded by transactions, as could be seen during numerous popular ICOs and throughout the Cryptokitties application craze, which led to frustratingly slow transactions and high fees. Since every participating node in the Ethereum network has to validate each transaction sequentially, store transactions on the ledger, and maintain a copy of that ledger, blockchain scalability decreases as network size increases.

EOS.IO has developed a blockchain architecture designed to enable vertical and horizontal scaling of Dapps, which features low latency and extremely high throughput. Using Graphene technology, the EOS.IO blockchain can handle over 100,000 tx/s. Deterministic parallel processing of smart contracts will scale the network to millions of tx/s, more than enough for our platform and an array of interconnecting apps.

Today, EOS has been shown to successfully process 2,500 tx/s on their current single threaded main net. The present-day EOS blockchain scales more than two orders of magnitude over Ethereum and is an obvious candidate for our applications. As an app developer, scalability is paramount, and EOS has shown it can scale.

Superior Consensus and Governance Model.

EOS.IO utilizes Byzantine Fault Tolerance Delegated Proof-of-Stake (DPOS) for their consensus algorithm, whereby token holders select 21 block producers through a continuous approval voting system. This is the only known decentralised consensus algorithm proven to support large-scale applications on the blockchain. Ethereum currently uses proof-of-work, with plans to switch to a hybrid proof-of-work and proof-of-stake model. Some contend that DPOS is less decentralised than POW or POS because there are only 21 block producers selected to secure the network. However, it is well understood that, like Bitcoin, Ethereum mining pools are highly centralised. EOS.IO features 21 elected block producers distributed around the globe each validating about

the same percentage of transactions, while in Ethereum, 4 mining pools validate about 72% of the network. Two pools control almost 51% of the network.

EOS.IO is not without its own issues. The first few months after the launch of the main net saw concerns with block producer selection and RAM prices. However, these hiccups are to be expected as we are still in the infancy of this revolutionary blockchain. We have the upmost faith that EOS.IO will be around for the long-term and provide a decentralised architecture upon which hundreds of successful applications and companies will be built.

## **4. The 'LLG' Gaming Platform**

### **4.1 High Performance and Built for Scalability**

'LLG' will be offering the world first blockchain based multiplayer games, integrated trust-less smart contracts. The powerful EOS.IO blockchain architecture allows us to provide gaming experiences on par or superior to current leading platforms. We'll be able to build dynamic, blazingly fast games with near-zero latency. We are actively looking into multiplayer games, and hybrid gaming-gambling games using state of the art frameworks like Unity3D. The future isn't rehashing games popularised by physical casinos on the internet. We have a lot in store, so stick with us on this journey.

### **4.2 The Best Games Around**

'LLG' is not just your typical online casino. Although we have plans to offer some of the most popular classic games like Blackjack, Roulette, Baccarat, and slots, but our goal is to push the boundaries of online betting games. To this end, we hope to develop some new and innovative game concepts, especially in the multiplayer space. We'll also be developing some unique variations of popular lottery, crash, and basic battle royale style games. While most of our development will be done in-house, we've also spoken to a number of independent game studios interested in collaborating.

Once we have established our presence online, we plan to develop a number of games for the mobile market, which is projected to have 165 million players worldwide by 2018 (up from 65 million 2013) and over USD 100bn. The timeline for our mobile game rollout depends heavily on the development of the EOS.IO platform and on how quickly we can corner the online cryptocurrency gambling market.

Lastly, while it's not an immediate priority, we eventually hope to make a foray into the virtual reality space, integrating with WebVR's JavaScript API that provides support for a number of virtual reality devices in a web browser. Gamers spend hours playing games like World of Warcraft to unlock in-game items and fighting for in-game currency. Game studios are reluctant to assign real world value to these items and currencies, because it would reduce profits. Utilising tokenisation techniques on EOS, we can allow for the buying and selling of these in-game assets. Gamers can make real money playing our games, something we assume will be very lucrative for skilled players.

'LLG' is not just a casino, nor a gambling company. As the EOS ecosystem matures, we seek to combine gaming and gambling into a new, hybrid class of game. We will allow players to wager their game-tokens on battles and quests, upping the stakes and fun-factor!

Our first released game is Baccarat — a classic casino game which allows multiplayer play together on EOS blockchain and will bring the excitement with most fairness and transparent to all players.

#### **4.3 Fully Distributed, Trust-less and Permission-less**

As most familiar with cryptocurrency know, these attributes are the key reasons to place bets on a blockchain-based platform as opposed to a traditional online casino.

EOS.IO software utilises a powerful decentralised consensus algorithm called Delegated Proof of Stake (DPOS), whereby token holders on a blockchain adopting the software select block producers through a continuous voting system. Think of EOS.IO as a commercial-scale operating system with 21 distributed nodes serving as the databases and means of verifying the true state of the network. 'LLG' will be built and ran entirely on the EOS.IO blockchain architecture, and all operations, including gameplay, dividend payouts, and governance will be executed in a decentralised matter. All 'LLG' games and applications will run just as they are programmed with little-to-no chance of downtime, censorship, or third-party interference.

In the simplest terms, being decentralised and on-chain means that no one controls the casino. The entire platform is fully contract-based and lives on the EOS.IO blockchain. Each game event is executed on the network and becomes permanently part of the blockchain. Our game contracts are unstoppable, meaning that they will live on as long as the EOS.IO operating system is alive.

Players are guaranteed to have a fair game on our site. For the first time in online gambling history, you don't need to trust the house. Each game will have an accompanying cryptographic proof that you had a fair game, with the exact odds you agreed to.

#### **4.4 100% Fee-less**

'LLG' will never charge any transaction fees, as all costs of using the network are covered by the platform. No user wants to be nickel and dime each time they play another hand of blackjack. The presence of transaction fees also acts as an additional cognitive cost for users:

A transaction can't be worth so much as to require a decision but worth so little that that decision is automatic. There is a certain amount of anxiety involved in any decision to buy, no matter how small, and it derives not from the interface used or the time required, but from the very act of deciding.

Micropayment, like all payments, require a comparison: "Is this much of X worth that much of Y?" There is a minimum mental transaction cost created by this fact that cannot be optimised away, because the only transaction a user will be willing to approve with no thought will be one that costs them nothing, which is no transaction at all.

No popular online gambling site charges fees per transaction and doing so would be a substantial barrier to user adoption. Blockchains use transaction fees as a way to protect against malicious users spamming the network. For instance, in Ethereum, gas fees are used for every calculation and operation, something that can be costly for the user, especially given that fees can spike prohibitively high during periods of increased network activity. EOS.IO solves this issue through use of an ownership model, whereby holding EOS tokens gives a proportional stake in the system's resources.

'LLG' will hold an appropriate amount of EOS tokens granting the platform sufficient bandwidth, storage, and computational power. A sufficient amount of token sale proceeds will be set aside to ensure that the platform can scale in order to meet user demand.

#### **4.5 Dividends for Token Holders**

'LLG' offers more than just the opportunity for decentralised, provably fair betting. We also allow our token holders to receive dividends in EOS from our games! 100% of all profit will be distributed to LLG holders in proportion to the number of tokens they hold.

We are the first and only platform on EOS that enables our token holders to be rewarded in EOS. This is a community-driven project and thus the community should be able to benefit from the success of the platform. Section 6 contains more details on the LLG token.

## **5. Proven and Experienced Company**

## **5.1 Accomplished Track Record of Game Development**

Our development team is one of the registered block producer on EOS, and we have developed several block explorer, wallet and tools, there's no doubt about the technical skill sets team have.

Due to the uncertainties and constantly evolving legal/regulatory environment facing both online gambling and cryptocurrencies, the 'LLG' team has opted to remain semi-private for the time being.

However, in the short-term, we believe it is the right decision to ensure that our employees are not accused of running afoul of the law. This is particularly important as we have team members operating in multiple jurisdictions with differing regulatory climates and attitudes towards blockchain-based gambling. Following legal consultations, we are confident that the services offered by 'LLG' are neither illegal nor would likely be considered securities by leading regulatory commissions. Nonetheless, given the ambiguity of different online gaming laws, we have elected to exercise extra caution to protect our team members, even if it may come at the expense of fundraising. We are in the process of receiving additional legal guidance to ensure that we can eventually obtain proper licenses and meet gaming laws.

We understand some may be skeptical of a private team. We advise you to never invest in a project you are not confident in. We take trust seriously and will continue to ensure that every other aspect of our platform operates as openly and transparently as possible. And in the meantime, we'll let our proof-of- concept games, smart contracts, papers, and content speak for themselves.

More detailed personnel information is available to qualified parties upon request.

## 6. LLG token

### 6.1 Bet in EOS, Win in EOS!

Unlike many cryptocurrency casinos, we will not force our players to use a platform-specific coin in order to bet. We view this as an unnecessary and greedy requirement. Necessitating a native token for betting also serves as a large barrier to entry for new players who must purchase this token from an exchange and figure out how to store it in a wallet just in order to play a few games. Instead, all bets will be placed and won in EOS. We also plan to accept other major coins like Bitcoin, Bitcoin Cash, Ethereum, Litecoin, and Monero in the future. However, these assets are obviously non-native to the EOS blockchain, and will likely need to be converted into EOS to play and converted back into your currency of choice on cash-out. We will be making this an extremely simple and secure process. The barriers to entry need to be extremely low on a gambling site, or users will go elsewhere. With 'LLG', you don't even need a login. Just play!

### 6.2 The LLG token

The sole function of the LLG token is to provide dividends to token holders. 100% of EOS earned from the LLG games will be sent directly to token holders in proportion to the number of tokens held. There will only be 1 billion LLG tokens created, and total supply will never increase. Therefore, if you held 1% of all LLG tokens and game earnings for the period was 100,000 EOS, you would receive 1,000 EOS for the period.

Dividend payouts will occur on a Daily basis. All payouts are smart contract-based and operate trustlessly, without the need of any complex action from token holders. Ideally, we would provide immediate payouts to our token holders after each bet. However, this is currently unfeasible since EOS tokens are limited to only 4 decimal places, meaning that token holders with small balances would not be able to be paid out. In the future, we will consider implementing automatic payment once an account's balance reaches a certain amount (e.g. 0.1 EOS) in lieu of quarterly payments. We will also continue to monitor any potential changes to the EOS token decimal scale by block.one.

It's important to note that we are not offering a utility/betting token. It is silly to require bettors to purchase an obscure token to bet on your platform. 99% of users simply aren't going to sign up for an unknown exchange and convert their EOS to a betting token to play on your platform. This is a massive barrier to entry. We can see these effects in platforms like Funfair and Edgeless who can barely attract players to place bets with their betting tokens (even though they had massive token sales).

## **7. Airdrop, Referral Program, and Token Sale**

### **7.1 Interactive Airdrop**

Since we are offering a valuable dividend token rather than a simple utility token, it doesn't make sense to undertake an expensive, traditional airdrop.

That's why we're introducing a novel method for airdrop claims that will allow players of our games to receive free LLG tokens. For each EOS wagered and lost the bet, the bettor will automatically receive an amount of LLG tokens in return. The rate at which LLG will be given out at a constant rate of 1EOS:1000LLG. Winning bet will not receive LLG token but will be payout automatically in EOS.

### **7.2 Referral Program**

We will be rolling out a generous '3 layer referral program' for our games that benefits both parties. Refer someone and receive not only a percentage of his betting but also extended to 3 layers of players' referral betting.

### **7.3 Token Sale**

There will be no token sale for the public, the only way to secure LLG token is to play the game or refer someone to play the game.

## **8. Legal/Disclaimer**

NO PERSONS UNDER THE AGE OF 18 ARE PERMITTED TO GAMBLE.

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