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vDice ICO - Whitepaper

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1. Introduction

In the following document we will explain our proposal for the architecture of the vDice Token (called: 'vSlice') and Crowdsale Smart Contract System.

The vDice game technology itself is live, processing bets. It can be viewed here.

We will reuse, as much as possible, the *standardized* code that exists in the Ethereum ecosystem, with the aim of minimizing the implementation complexity. This will also ensure system security.

In particular, the base of the architecture will be built upon the wallet contract and the ERC20 token contract. These have received extensive scrutiny and have been thoroughly vetted by the Ethereum community.

Some modifications are needed in order to implement the custom logic, but the abovementioned contracts will provide a solid groundwork from which to build.

2. Design and Features

The 'vSlice' Smart Contract System is a set of smart contracts which provide the following features:

● A safe and auditable exchange of Ether (ETH) for 'vSlice' tokens during the creation phase.

● Token holders will receive a share of vDice profit, proportional to the amount of tokens held, in a fair and transparent way.

● Tokens will behave as any standard ERC20 token.

3. Architecture

We will achieve the objectives listed above with the following architecture:

- **Manual Coin Locking**

a) Each token holder gets an amount of token proportional to the ETH they deposit into the Crowdsale (ICO), in the ratio of:
   - Week 1 = 1 : 130
   - Week 2 = 1 : 120
   - Weeks 3 & 4 = 1 : 100

b) The profit from vDice is sent to the token contract and is accumulated in its balance.

c) The token contract can be in any one of these two states:

*i. **Unlocked**: tokens are freely transferable, and profit cannot be withdrawn during this period of time. The length of unlocked time period will be decided at contract deployment: e.g 3 weeks.*

*ii. **Locked**: tokens cannot be transferred. Each token holder can withdraw their profit share only during this period of time. The profits which are not collected can be sent/withdrawn to the wallet contract. The length of the locked time period should be decided at contract deployment: e.g 1 week.*

4. Analysis

It's the most simple approach for distributing vDice game profits to token holders. It's the easiest to implement. It needs few modifications to the standard ERC20 token contract. This will provide maximum security.

It should be remembered that if a 'vSlice' holder fails to withdraw their profits, they will loss their share of the profits during that time period.

Coins are perfectly transferable and fungible on exchanges. However, sending to and from exchanges is prevented during the coin-locking period.

5. GUI Wallet

A GUI wallet will be provided with the crowdsale. This will give a safe place to store tokens, receive notifications of lock-periods and a offer a simple point-and-click interface to call the withdrawal function and receive your share of vDice game profits.

6. How to Participate

Click here for details on how to participate.

II. ICO Details.

Outline

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1. Introduction to vDice

vDice is the leading blockchain-based betting game for the Ethereum network. It went live on June 13th, 2016. It has processed almost 10,000 bets to-date.

It is a classic 'SatoshiDICE-style' betting game, implemented as an Ethereum Smart Contract (Dapp), and exists on the Ethereum blockchain.

SatoshiDICE was the world's first blockchain-betting game, built on Bitcoin's blockchain and released in April, 2012.

As of January 2013, SatoshiDICE had taken approximately US$ 15 million in bets.

2. How vDice Works

Ethereum builds and improves on the Bitcoin blockchain. In the same way, vDice builds and improves on blockchain betting technology, generally.

Whereas SatoshiDICE was *somewhat* decentralised, vDice is fully decentralised.

vDice leverages the power of Ethereum smart contracts to build a game that has no server architecture. Instead, bets are processed through an Oracle, using the 3rd party services of random.org for the random number source.

To play, a user sends a Tx to a contract. Then the contract executes the oracle contract. The oracle then calls the contract back. So there are two transactions to a contract for every bet made: one is the user, the second is the oracle.

There is also the option for users to contribute Ether (ETH) to each betting contract. In this way users can share in the success of a specific contract and increase the house.

The Smart Contracts are live, network tested, and processing bets on a continuous basis.

3. The Crowdsale Object: 'vSlice' Token

The object of this Crowdsale is the native token of the vDice game called; 'vSlice'.

This token is tied directly the the profits of the vDice game. Holders of vSlice tokens receive a share of vDice profit, proportional to the amount of tokens held, in a fair and transparent way.

'vSlice' tokens behave as any standard ERC20 token.

People participate in the Crowdsale using BTC or ETH. It will all be resolved to Ether (ETH) and the Ethereum blockchain.

The issuance will last 4 weeks, starting November 15th, 2016 and ending December 15th, 2016.

The 'vSlice' token Smart Contract will be deployed and people who contribute will receive:

- Week 1 = 1 : 130
- Week 2 = 1 : 120
- Weeks 3 & 4 = 1 : 100

for each Ether (ETH) they send, for the 1-month of the issuance. So, for example; 100 ETH will get 13,000 vSlice tokens, up until the cap of 700,000 ETH. There is also a small pre-allocation of tokens at lower rate of 1 : 100 , up to 50K ETH limit, giving a total of 5M 'vSlice'.

Therefore, as a meta-token on the Ethereum (ETH) blockchain, the vSlice token has a maximum possible coin supply of 96M vSlice.

The Crowdsale Smart Contract is fully decentralised. That is, the sending of Ether (ETH) to the Token Smart Contract will result in the immediate, and decentralised, issuance of the contributors vSlice tokens on the Ethereum blockchain.

As soon as they are issued, accrued profits from the game are available.

4. Crowdsale Technical Design

For the full technical specifications of the Crowdsale Smart Contracts, 'vSlice' tokens and distribution, please see Section I of this document.

5. Fund Utilization and Roadmap

All funds raised in this crowdsale shall be allocated for the development and marketing of the vDice platform and project. Here is a full analysis of the business, operations and plan for the use of funds.

The project will continue to push the limits of on-blockchain transaction processing; fully decentralized and through an oracle. In a broader sense vDice exists to see how fast and cost efficient it is possible to get on-blockchain transactions, through an oracle, using Ethereum Smart Contracts.

The full vDice development roadmap document is presented here. The development roadmap as a visual graphic can be found here.

vDice will publish the accounting of funds every 6-months, on the Ethereum blockchain. This timing may be advanced or delayed when in special times.

6. How to Participate

Participants should visit crowdsale.vdice.io during the crowdsale period; November 15th, 2016 until December 15th, 2016. You can participate using Bitcoin (BTC) or Ether (ETH).

7. Duration and Timing

This ICO lasts for 30 days. It will begin on November 15th, 2016 and terminate on December 12th, 2016.

8. The vSlice Token Distribution

Anyone who wants to participate in the crowdsale should have Ether (ETH) held in any wallet: Ethereum Wallet, Mist, Parity UI, MyEtherWallet, Jaxx, Metamask, etc.

Once they have an Ethereum account with Ether (ETH), they simply need to send a transaction with a special gas amount (it will be approx. 30,000-40,000 Gas) to the 'vSlice' address, as displayed on the website.

The transaction will immediately create an equivalent amount of 'vSlice' tokens, with an exchange rate of:

- Week 1 = 1 : 130
- Week 2 = 1 : 120
- Weeks 3 & 4 = 1 : 100

in the token contract, without any other user interaction.

Once the transaction has been confirmed you will see your token amount on the Ethereum Blockchain, and viewable through web-UI on the Crowdsale website.

Participants of this Crowdsale may sell 'vSlice' tokens as soon as they receive them, or hold 'vSlice' for a longer term. The 'vSlice' belong to the owners.

9. Smart Contract Security

The game vDice is based on Ethereum Smart Contract (DAPP) technology. This has been built using open source technology by the vDice team.

The vDice game code has been audited by leading blockchain technologists. Full audits of the vDice game Smart Contract is available here.

The Crowdsale too is based on Ethereum Smart Contract technology, according to industry standards. The full specification of the Smart Contract code for the Crowdsale and token issuance is here.

Audits of the Smart Contract code handling the Crowdsale and token distribution is here.

10. Disclaimer

vSlice is the native token of the vDice blockchain Dapp. It is not or cannot be deemed to be any kind of equities of any real-world company. This Initial Crowd-Offering is about products, not equities. The blockchain industry is a new industry and may contain technological, policy and market risks.