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AUDIT COMPANY

Smart Contract Security Audit

TechRate

January, 2022

Audit Details

Audited project

Shuna Inuverse

Deployer address

0x0e51d8a5c99e3c4916336eca143f9d44054721c5

Client contacts:

Shuna Inuverse team

Blockchain

Ethereum

Project website:

https://www.shunainuverse.com/

Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the below disclaimer below – please make sure to read it in full.

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The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed.

Background

TechRate was commissioned by Shuna Inuverse to perform an audit of smart contracts:

https://etherscan.io/address/0xde72a052cbb212eff11a4a33d61df9c5a2de8dd1#code

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

Contracts Details

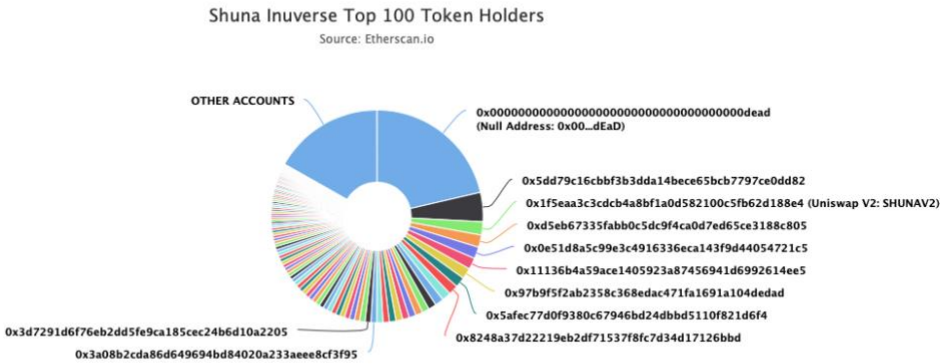
Token contract details for 11.01.2022

Contract name	Shuna Inuverse
Contract address	0xDE72a052cBB212eFf11A4A33d61dF9C5A2De8dd1
Total supply	100,000,000,000,000
Token ticker	SHUNAV2
Decimals	9
Token holders	1,552
Transactions count	3,654
Top 100 holders dominance	83.18%
Launch sell fee	925
Dev fee	500
Rewards fee	500
Uniswap V2 pair	0x1f5eaa3c3cdcb4a8bf1a0d582100c5fb62d188e4
Contract deployer address	0x0e51d8a5c99e3c4916336eca143f9d44054721c5
Contract's current owner address	0x0e51d8a5c99e3c4916336eca143f9d44054721c5

Shuna Inuverse Token Distribution

The top 100 holders collectively own 83.18% (83,177,780,648,971.80 Tokens) of Shuna Inuverse

Token Total Supply: 100,000,000,000,000.00 Token | Total Token Holders: 1,552

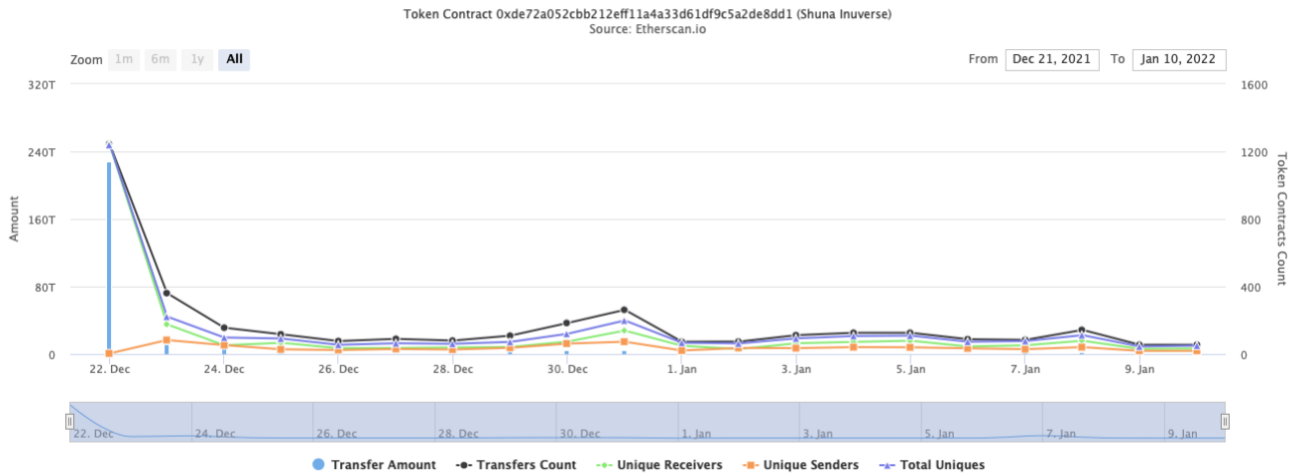


(A total of 83,177,780,648,971.80 tokens held by the top 100 accounts from the total supply of 100,000,000,000,000.00 token)

Shuna Inuverse Contract Interaction Details

Time Series: Token Contract Overview

Wed 22, Dec 2021 - Mon 10, Jan 2022



Shuna Inuverse Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	Null Address: 0x00...dEaD	21,390,699,054,408	21.3907%
2	0x5dd79c16cbbf3b3dda14bece65bcb7797ce0dd82	4,440,411,698,037.182122804	4.4404%
3	Uniswap V2: SHUNAV2	2,017,733,017,238.11234684	2.0177%
4	0xd5eb67335fabb0c5dc9f4ca0d7ed65ce3188c805	1,860,157,517,491.856016487	1.8602%
5	0x0e51d8a5c99e3c4916336eca143f9d44054721c5	1,782,667,804,519	1.7827%
6	0x11136b4a59ace1405923a87456941d6992614ee5	1,750,668,997,456	1.7507%
7	0x97b9f5f2ab2358c368edac471fa1691a104dedad	1,658,759,494,006.786937816	1.6588%
8	0x5afec77d0f9380c67946bd24dbbd5110f821d6f4	1,567,698,092,034.817500015	1.5677%
9	0x8248a37d22219eb2df71537f8fc7d34d17126bbd	1,500,000,000,000	1.5000%
10	0x15967114d89c4c7e2218be941a50863d3f804b28	1,376,228,800,000	1.3762%

Contract functions details

+ [Lib] SafeMath
  - [Int] add
  - [Int] sub
  - [Int] sub
  - [Int] mul
  - [Int] div
  - [Int] div
  - [Int] mod
  - [Int] mod

+ RewardsToken (ERC20, Ownable)
  - [Int] deleteExcluded #
  - [Int] getExcludedBalances
  - [Pub] excludeFromRewards #
    - modifiers: onlyOwner
  - [Ext] includeInRewards #
    - modifiers: onlyOwner
  - [Ext] isExcludedFromRewards
  - [Ext] getAllExcludedFromRewards
  - [Pub] getRewardsSupply

+ Ownable (Context)
  - [Pub] <Constructor> #
  - [Pub] owner
  - [Ext] renounceOwnership #
    - modifiers: onlyOwner
  - [Ext] transferOwnership #
    - modifiers: onlyOwner

+ [Int] IUniswapV2Router
  - [Ext] factory
  - [Ext] WETH
  - [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #

+ [Int] IUniswapV2Factory
  - [Ext] createPair #

+ [Int] IRewardsTracker
  - [Ext] addAllocation ($)

+ [Int] IERC20Metadata (IERC20)
  - [Ext] name
  - [Ext] symbol
  - [Ext] decimals

+ [Int] IERC20
  - [Ext] totalSupply
  - [Ext] balanceOf
  - [Ext] transfer #
  - [Ext] allowance
  - [Ext] approve #

```
  - [Ext] transferFrom #

+ ERC20 (Context, IERC20, IERC20Metadata)
  - [Pub] <Constructor> #
  - [Pub] name
  - [Pub] symbol
  - [Pub] decimals
  - [Pub] totalSupply
  - [Pub] balanceOf
  - [Pub] transfer #
  - [Pub] allowance
  - [Pub] approve #
  - [Pub] transferFrom #
  - [Pub] increaseAllowance #
  - [Pub] decreaseAllowance #
  - [Int] _transfer #
  - [Int] _mint #
  - [Int] _burn #
  - [Int] _approve #
  - [Int] _beforeTokenTransfer #

+ Context
  - [Int] _msgSender
  - [Int] _msgData

+ [Lib] Address
  - [Int] isContract
  - [Int] sendValue #
  - [Int] functionCall #
  - [Int] functionCall #
  - [Int] functionCallWithValue #
  - [Int] functionCallWithValue #
  - [Prv] _functionCallWithValue #

+ ShunaInuverse (RewardsToken)
  - [Pub] <Constructor> #
    - modifiers: ERC20
  - [Pub] decimals
  - [Int] _transfer #
  - [Ext] <Fallback> ($)
  - [Prv] _getValues
  - [Prv] _takeFee #
  - [Prv] calculateFee
  - [Prv] removeAllFee #
  - [Prv] restoreAllFee #
  - [Prv] swapAndRedirectEthFees #
    - modifiers: lockTheSwap
  - [Prv] sendEthToWallet #
  - [Prv] swapTokensForEth #
  - [Ext] setUseGenericTransfer #
    - modifiers: onlyOwner
  - [Ext] setMaxTxPercent #
    - modifiers: onlyOwner
  - [Ext] isExcludedFromFee
  - [Ext] excludeFromFee #
```

- modifiers: onlyOwner
- [Ext] includeInFee #
  - modifiers: onlyOwner
- [Ext] setFees #
  - modifiers: onlyOwner
- [Ext] setLaunchSellFee #
  - modifiers: onlyOwner
- [Ext] setDevWallet #
  - modifiers: onlyOwner
- [Ext] setRewardsTracker #
  - modifiers: onlyOwner
- [Ext] setRouterAddress #
  - modifiers: onlyOwner
- [Ext] setSwapAndRedirectEthFeesEnabled #
  - modifiers: onlyOwner
- [Ext] setMinTokensBeforeSwap #
  - modifiers: onlyOwner
- [Ext] manualSwap #
  - modifiers: onlyOwner
- [Ext] manualSend #
  - modifiers: onlyOwner

($) = payable function
= non-constant function

Issues Checking Status

	Issue description	Checking status
1.	Compiler errors.	Passed
2.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3.	Possible delays in data delivery.	Passed
4.	Oracle calls.	Passed
5.	Front running.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow.	Passed
8.	DoS with Revert.	Passed
9.	DoS with block gas limit.	Low issues
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	The impact of the exchange rate on the logic.	Passed
13.	Private user data leaks.	Passed
14.	Malicious Event log.	Passed
15.	Scoping and Declarations.	Passed
16.	Uninitialized storage pointers.	Passed
17.	Arithmetic accuracy.	Passed
18.	Design Logic.	Low issues
19.	Cross-function race conditions.	Passed
20.	Safe Open Zeppelin contracts implementation and usage.	Passed
21.	Fallback function security.	Passed

Security Issues

High Severity Issues

No high severity issues found.

Medium Severity Issues

No medium severity issues found.

Low Severity Issues

1. Out of gas

Issue:

- The functions `includeInReward()` and `getExcludedBalances()` uses the loop to iterate through `excludedFromRewards` list. Function will be aborted with `OUT_OF_GAS` exception if there will be a long excluded addresses list.

Recommendation:
Check that the excluded array length is not too big.

2. Dev fee issue

Issue:

- Dev fee increases on sell, but this setting is not taken into account in `swapAndRedirectEthFees()` function.

Recommendation:
Make corrections that will include dev fee changes.

Owner privileges (In the period when the owner is not renounced)

- Owner can include/exclude from rewards.
- Owner can enable/disable useGenericTransfer value.
- Owner can change the maximum transaction amount.
- Owner can exclude from the fee.
- Owner can change dev and reward fees.
- Owner can change launchSellFee.
- Owner can change _devWalletAddress.
- Owner can change _rewardsTracker address.
- Owner can change router address.
- Owner can enable/disable swapAndRedirectEthFeesEnabled.
- Owner can change minTokensBeforeSwap value.
- Owner can manually swap contract tokens to ETHs.
- Owner can withdraw contract tokens to _devWalletAddress.

Conclusion

Smart contracts contain low severity issues! Liquidity pair contract's security is not checked due to out of scope.

Liquidity locking details provided by the team:
https://app.unicrypt.network/amm/uni-v2/pair/0x1f5eaa3c3cdcb4a8bf1a0d582100c5fb62d188e4

TechRate note:

Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.