HackSafe

Smart Contract Security Audit Report

Transhuman Coin

January 2023

Security Status

★★★★☆

www.hacksafe.io

Audit Details

Audited project
Transhuman Coin

Deployer address
0x018fbdf1d7085781d321e8fbb25004c3dbfa1f9a

Client contacts
Transhuman Coin

Blockchain
Binance smart chain

Website
Https://Www.Transhumancoin.Finance/

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.

Procedure

Step 1 - In-Depth Manual Review

Manual line-by-line code reviews to ensure the logic behind each function is sound and safe from various attack vectors. This is the most important and lengthy portion of the audit process (as automated tools often cannot find the nuances that lead to exploits such as flash loan attacks).

Step 2 - Automated Testing

Simulation of a variety of interactions with your Smart Contract on a test blockchain leveraging a combination of automated test tools and manual testing to determine if any security vulnerabilities exist.

Step 3 – Leadership Review

The engineers assigned to the audit will schedule meetings with our leadership team to review the contracts, any comments or findings, and ask questions to further apply adversarial thinking to discuss less common attack vectors.

Step 4 - Resolution of Issues

Consulting with the team to provide our recommendations to ensure the code's security and optimize its gas efficiency, if possible. We assist project team's in resolving any outstanding issues or implementing our recommendations.

Step 5 - Published Audit Report

Boiling down results and findings into an easy-to-read report tailored to the project. Our audit reports highlight resolved issues and any risks that exist to the project or its users, along with any remaining suggested remediation measures. Diagrams are included at the end of each report to help users understand the interactions which occur within the project.

Background

HackSafe was commissioned by Transhuman Coin to perform an audit of smart contracts:

- https://bscscan.com/token/0x56083560594E314b5cDd1680eC6a493bb851BBd8#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 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.

Contract Details

Token contract details for 09.01.2023

Token Type	: DEFI
Contract name	: TranshumanCoin
Contract address	: 0x56083560594E314b5cDd1680eC6a493bb851BBd8
Total supply	: 7,000,000,000
Token ticker	: THC
Decimals	: 9
Token Holders	: 15,013
Transactions count	: 107,301
Compiler version	: v0.8.4+commit.c7e474f2
Contract deployer address	: 0x018fbdf1d7085781d321e8fbb25004c3dbfa1f9a
Owner address	: 0x018fbdf1d7085781d321e8fbb25004c3dbfa1f9a

Audit Summary

According to the standard audit assessment, Customer`s solidity smart contracts are **“Secure”**. This token contract does contain owner control, which do not make it fully decentralized.

Insecure	Poor secured	Secure	Well-secured

We used various tools like Slither, Mythril and Remix IDE. At the same time this finding is based on critical analysis of the manual audit. All issues found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the issues checking status.

We found 0 critical, 0 high, 1 medium and 0 low.

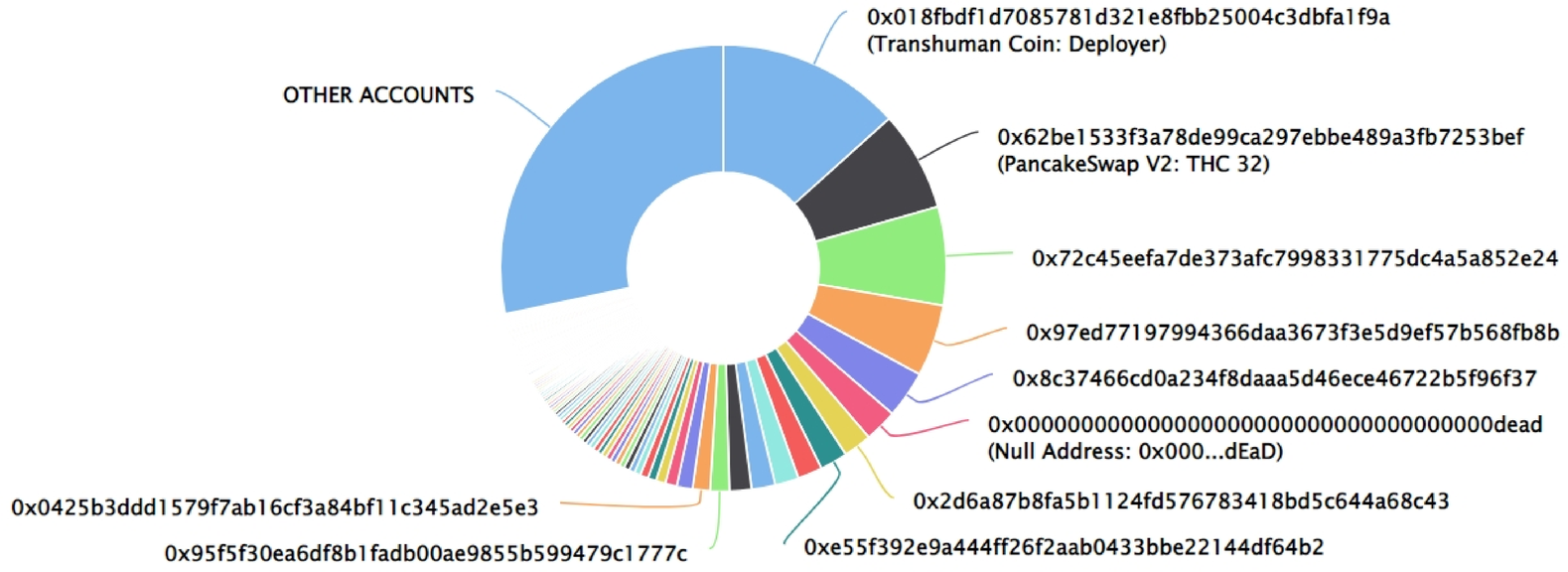
TranshumanCoin Token Distribution

The top 100 holders collectively own 71.69% (5,018,180,347.16 Tokens) of Transhuman Coin

Token Total Supply: 7,000,000,000.00 Token | Total Token Holders: 15,014

Transhuman Coin Top 100 Token Holders

Source: BscScan.com



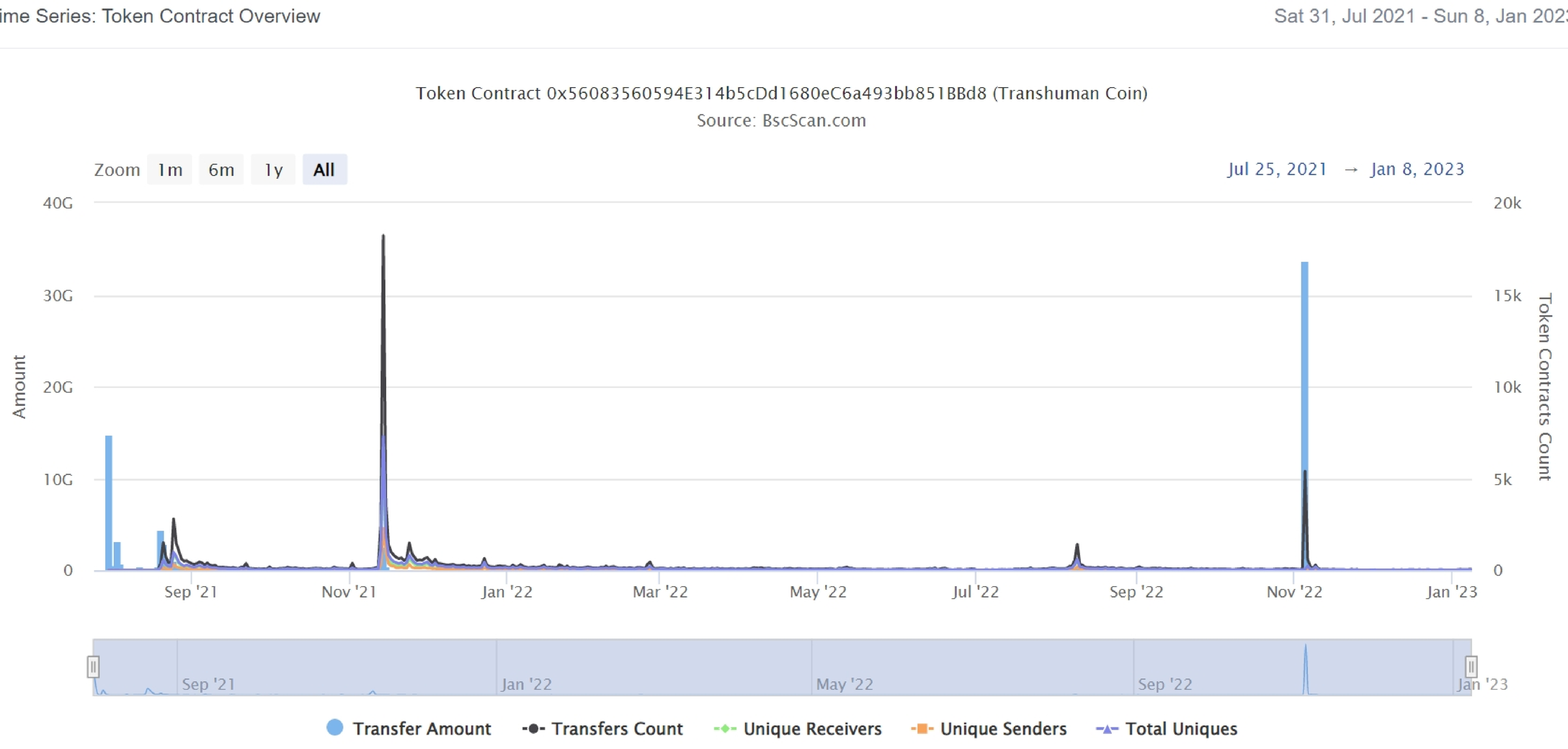
TranshumanCoin Top 20 Token Holders

(A total of 5,018,180,347.16 tokens held by the top 100 accounts from the total supply of 7,000,000,000.00 token)

Rank	Address	Quantity (Token)	Percentage
1	Transhuman Coin: Deployer	933,460,415.878670866	13.3351%
2	PancakeSwap V2: THC 32	507,036,761.910773779	7.2434%
3	0x72c45eefa7de373afc7998331775dc4a5a852e24	498,382,603.010251919	7.1198%
4	0x97ed77197994366daa3673f3e5d9ef57b568fb8b	364,728,737.797357838	5.2104%
5	0x8c37466cd0a234f8daaa5d46ece46722b5f96f37	239,883,280.501872002	3.4269%
6	Null Address: 0x000...dEaD	166,069,427.728387549	2.3724%
7	0x2d6a87b8fa5b1124fd576783418bd5c644a68c43	143,440,418.069840285	2.0491%
8	0xe55f392e9a444ff26f2aab0433bbe22144df64b2	140,238,540.19352567	2.0034%
9	0x02ea59339a8e2302d520066bbe2ac6026cf39b4b	124,815,818.878691603	1.7831%
10	0x17d7251a8a8d60ab74d7d2b2d20d2a0389871729	120,593,968.232933695	1.7228%
11	0xd93652ffa5db1860a1fdb5412a0fc0a4da321f57	119,602,582.009997888	1.7086%
12	0x37742ccc4741de546897b1ef12dac8d8501f1724	111,495,278.778279125	1.5928%
13	0x95f5f30ea6df8b1fadb00ae9855b599479c1777c	97,516,084.40224892	1.3931%
14	0x0425b3ddd1579f7ab16cf3a84bf11c345ad2e5e3	87,929,349.971559444	1.2561%
15	0x447dda078bff946515830c5321d11536de91a0d4	79,909,282.974017322	1.1416%
16	0x75987b9edb5463ce1a3a857e11671424600927a4	59,391,568.10932008	0.8485%
17	0xa92bee564a70f5ebf4882572c349c30c5a28b3ea	47,318,895.879292413	0.6760%
18	0xe831926b6cf672773fc62ced134eb99725ed6ac5	43,088,764.576024895	0.6156%
19	PancakeSwap V2: THC-BUSD 3	40,917,464.331074977	0.5845%
20	0x3e0c7d17c645214e1d056ac7a2fc7c2a2f34c4a4	31,916,191.53897974	0.4559%

TranshumanCoin Token Distribution

TranshumanCoin Contract overview



Contract functions details

+Context

- -[Int] _msgSender
- -[Int] _msgData

+[Int] IERC20

- -[Ext] totalSupply
- -[Ext] balanceOf
- -[Ext] transfer #
- -[Ext] allowance
- -[Ext] approve #
- -[Ext] transferFrom #

+[Lib] SafeMath

- -[Int] add
- -[Int] sub
- -[Int] sub
- -[Int] mul
- -[Int] div
- -[Int] div
- -[Int] mod
- -[Int] mod

+Ownable (Context)

- - [Pub] <constructor>#
- - [Pub] owner
- - [Pub] renounceOwnership #
  - - modifiers: onlyOwner
- - [Pub] transferOwnership #
  - - modifiers: onlyOwner
- - [Pub] getUnlockTime
- - [Pub] lock #
  - - modifiers: onlyOwner
- - [Pub] unlock #

+ [Int] IUniswapV2Factory

- - [Ext] feeTo
- - [Ext] feeToSetter
- - [Ext] getPair
- - [Ext] allPairs
- - [Ext] allPairsLength

Contract functions details

- [Ext] createPair #
- [Ext] setFeeTo #
- [Ext] setFeeToSetter #

+ [Int] IUniswapV2Pair
  - [Ext] name
  - [Ext] symbol
  - [Ext] decimals
  - [Ext] totalSupply
  - [Ext] balanceOf
  - [Ext] allowance
  - [Ext] approve #
  - [Ext] transfer #
  - [Ext] transferFrom #
  - [Ext] DOMAIN_SEPARATOR
  - [Ext] PERMIT_TYPEHASH
  - [Ext] nonces
  - [Ext] permit #
  - [Ext] MINIMUM_LIQUIDITY
  - [Ext] factory
  - [Ext] token0
  - [Ext] token1
  - [Ext] getReserves
  - [Ext] price0CumulativeLast
  - [Ext] price1CumulativeLast
  - [Ext] kLast
  - [Ext] mint #
  - [Ext] burn #
  - [Ext] swap #
  - [Ext] skim #
  - [Ext] sync #
  - [Ext] initialize #

+ [Int] IUniswapV2Router01
  - [Ext] factory
  - [Ext] WETH
  - [Ext] addLiquidity #
  - [Ext] addLiquidityETH ($)
  - [Ext] removeLiquidity #

Contract functions details

- [Ext] removeLiquidityETH #
- [Ext] removeLiquidityWithPermit #
- [Ext] removeLiquidityETHWithPermit #
- [Ext] swapExactTokensForTokens #
- [Ext] swapTokensForExactTokens #
  - [Ext] swapExactETHForTokens ($)
  - [Ext] swapTokensForExactETH #
  - [Ext] swapExactTokensForETH #
  - [Ext] swapETHForExactTokens ($)
  - [Ext] quote
  - [Ext] getAmountOut
  - [Ext] getAmountIn
  - [Ext] getAmountsOut
  - [Ext] getAmountsIn

+ [Int] IUniswapV2Router02 (IUniswapV2Router01)
  - [Ext] removeLiquidityETHSupportingFeeOnTransferTokens #
  - [Ext] removeLiquidityETHWithPermitSupportingFeeOnTransferTokens #
  - [Ext] swapExactTokensForTokensSupportingFeeOnTransferTokens #
  - [Ext] swapExactETHForTokensSupportingFeeOnTransferTokens ($)
  - [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #

+TranshumanCoin (Context, IBEP20, Ownable)
  - [Pub] <constructor>#
    - modifiers: Ownable
  - [Pub] name
  - [Pub] symbol
  - [Pub] decimals
  - [Pub] totalSupply
  - [Pub] balanceOf
  - [Pub] transfer #
  - [Pub] allowance
  - [Pub] approve #
  - [Pub] transferFrom #
  - [Pub] increaseAllowance #
  - [Pub] decreaseAllowance #
  - [Pub] isExcludedFromReward
  - [Pub] totalFees
  - [Pub] deliver #

Contract functions details

- [Pub] reflectionFromToken
- [Pub] tokenFromReflection
- [Pub] excludeFromReward #
  - modifiers: onlyOwner
- [Ext] includeInReward #
  - modifiers: onlyOwner
- [Ext] setmarketingWallet #
  - modifiers: onlyOwner
- [Ext] setExcludedFromFee #
  - modifiers: onlyOwner
- [Ext] setTaxFeePercent #
  - modifiers: onlyOwner
- [Ext] setLiquidityFeePercent #
  - modifiers: onlyOwner
- [Ext] setPercentageOfLiquidityFormarketing #
  - modifiers: onlyOwner
- [Ext] setMaxTxAmount #
  - modifiers: onlyOwner
- [Pub] setSwapAndLiquifyEnabled #
  - modifiers: onlyOwner
- [Ext] ($)
- [Ext] setUniswapRouter #
  - modifiers: onlyOwner
- [Ext] setUniswapPair #
  - modifiers: onlyOwner
- [Ext] setExcludedFromAutoLiquidity #
  - modifiers: onlyOwner
- [Prv] _reflectFee #
- [Prv] _getTValues
- [Prv] _getRValues
- [Prv] _getRate
- [Prv] _getCurrentSupply
- [Prv] takeTransactionFee #
- [Prv] calculateFee
- [Pub] isExcludedFromFee
- [Prv] _approve #
- [Prv] _transfer #

Contract functions details

- [Prv] swapAndLiquify #
  - modifiers: lockTheSwap
- [Prv] swapTokensForBnb #
- [Prv] addLiquidity #
- [Prv] _tokenTransfer #
  - [Prv] _transferStandard #
  - [Prv] _transferBothExcluded #
  - [Prv] _transferToExcluded #
  - [Prv] _transferFromExcluded #

($) = payable function
= non-constant function

Issues Checking Status

No.	Title	Status
1.	Compiler error	Passed
2.	Missing Input Validation	Passed
3.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
4.	Possible delays in data delivery	Passed
5.	Oracle calls.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow	Passed
8.	DoS with Revert.	Passed
9.	DoS with block gas limit.	Medium Issue
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	Private use data leaks.	Passed
13.	Malicious Event log.	Passed
14.	Scoping and Declarations.	Passed
15.	Uninitialized storage pointers.	Passed
16.	Arithmetic accuracy.	Passed
17.	Design Logic.	Passed
18.	Safe Open Zeppelin contracts implementation and usage.	Passed
19.	Incorrect Naming State Variable	Passed
20.	Too old version	Passed

Severity Definitions

Risk Level	Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to assets loss or data manipulations.
High	High-level vulnerabilities are difficult to exploit; however, they also have a significant impact on smart contract execution, e.g., public access to crucial functions
Medium	Medium-level vulnerabilities are important to fix; however, they can't lead to assets loss or data manipulations.
Low	Low-level vulnerabilities are mostly related to outdated, unused, etc. code snippets that can't have a significant impact on execution.

Security Issues

- **Critical Severity Issues**

  No critical severity issue found.

- **High Severity Issues**

  No high severity issue found.

- **Medium Severity Issues**

  One medium severity issue found.

1. Out of gas

- **Issue:**

  The function includeInReward() uses the loop to find and remove addresses from the _excluded list. Function will be aborted with OUT_OF_GAS exception if there will be a long excluded addresses list.

  The function _getCurrentSupply also uses the loop for evaluating total supply. It also could 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.

- **Low Severity Issues**

  No low severity issue found.

Centralization

Owner Privileges

- Transhuman Coin Contract:
    - Owner can change the tax and liquidity fee.
    - Owner can change dev fee.
    - Owner can change the maximum transaction amount.
    - Owner can change dev wallet.
    - Owner can change uniswap router and pair.
    - Owner can exclude from and include to autoliquidity.
    - Owner can exclude from the fee.
    - Owner can disable and enable swap and liquify.
    - Owner can lock and unlock. By the way, using these functions the owner could retake privileges even after the ownership was renounced.

This smart contract has some functions which can be executed by the admin (Owner) only. If the admin wallet private key would be compromised, then it would create trouble, as smart contract ownership has not been renounced.

- RenounceOwnership
- TransferOwnership
- Lock
- ExcludeFromreward
- IncludeinReward
- SetmarKetingWallet
- SetExcludedFromFee
- SetTaxFeePercent
- SetLiquidityFeePercent
- SetPercentageOfLiquidityFormarKeting
- SetmaxTxamount
- SetSwapAndLiquifyEnabled
- SetUniswapRouter
- SetUniswapPair
- SetExcludedFromAutoLiquidity

Conclusion

Smart contract contains medium severity issues! The further transfer and operations with the fund raised are not related to this particular contract.

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