



**NOVOS**

## **KYC & AUDIT.**

Novos is an agency specializing in blockchain technology solutions, Audits, KYC / Doxx.



# CERTIFICATE OF COMPLIANCE

Smart Contract Audit by NOVOS



HTDAO Token

Audit Passed

10/25/2022

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# Audit Summary

This report has been prepared for HTDAO Token on the Heco Chain network. Novos provides both client-centered and user-centered examination of the smart contracts and their current status when applicable. This report represents the security assessment made to find issues and vulnerabilities on the source code along with the current liquidity and token holder statistics of the protocol.

A comprehensive examination has been performed, utilizing Cross Referencing, Static Analysis, In-House Security Tools, and line-by-line Manual Review.

The auditing process pays special attention to the following considerations:

- Ensuring contract logic meets the specifications and intentions of the client without exposing the user's funds to risk.
- Testing the smart contracts against both common and uncommon attack vectors.
- Inspecting liquidity and holders statistics to inform the current status to both users and client when applicable.
- Assessing the codebase to ensure compliance with current best practices and industry standards.
- Verifying contract functions that allow trusted and/or untrusted actors to mint, lock, pause, and transfer assets.
- Thorough line-by-line manual review of the entire codebase by industry experts.



## Project Overview

Parameter	Result
Address	0xdc6a75b895962a8f0d1f7fb00ce867115a02f38b
Name	HTDAO
Token Tracker	HTDAO
Decimals	9
Supply	1,000,000,000,000,000
Platform	Heco Chain
Compiler	v0.8.16+commit.07a7930e
Optimization	No, 200times
Other Settings:	default evmVersion
Language	Solidity
Codebase	<a href="https://www.hecoinfo.com/en-us/address/0xdc6a75b895962a8f0d1f7fb00ce867115a02f38b?tab=Contract">https://www.hecoinfo.com/en-us/address/0xdc6a75b895962a8f0d1f7fb00ce867115a02f38b?tab=Contract</a>
Url	<a href="https://t.me/HTDAO_HECO">https://t.me/HTDAO_HECO</a>

## Main Contract Assessed

Name	Contract	Live
HTDAO	0xdc6a75b895962a8f0d1f7fb00ce867115a02f38b	Yes



# Smart Contract Vulnerability Checks

Vulnerability	Automatic Scan	Manual Scan	Result
❖ Unencrypted Private Data On-Chain	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Code With No Effects	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Message call with hardcoded gas amount	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Hash Collisions With Multiple Variable Length Arguments	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Unexpected Ether balance	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Presence of unused variables	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Right-To-Left-Override control character (U+202E)	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Typographical Error	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ DoS With Block Gas Limit	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Arbitrary Jump with Function Type Variable	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Insufficient Gas Griefing	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Incorrect Inheritance Order	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Write to Arbitrary Storage Location	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Requirement Violation	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Missing Protection against Signature Replay Attacks	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Weak Sources of Randomness from Chain Attributes	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>





# Smart Contract Vulnerability Checks

Vulnerability	Automatic Scan	Manual Scan	Result
❖ Authorization through tx.origin	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Delegatecall to Untrusted Callee	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Use of Deprecated Solidity Functions	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Assert Violation	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Reentrancy	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Unprotected SELFDESTRUCT Instruction	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Unprotected Ether Withdrawal	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Unchecked Call Return Value	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Outdated Compiler Version	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Integer Overflow and Underflow	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>
❖ Function Default Visibility	✓ Complete	✓ Complete	✓ <b>Low / No Risk</b>





# Contract Ownership

The contract ownership of HTDAO Token is not currently renounced. The ownership of the contract grants special powers to the protocol creators, making them the sole addresses that can call sensible ownable functions that may alter the state of the protocol.

01

The current owner is the address `0xd6ebad327869d65dd35a9963805bbbabf67538fc` which can be viewed from: [HERE](#)

02

The owner wallet has the power to call the functions displayed on the privileged functions chart below, if the owner wallet is compromised this privileges could be exploited.

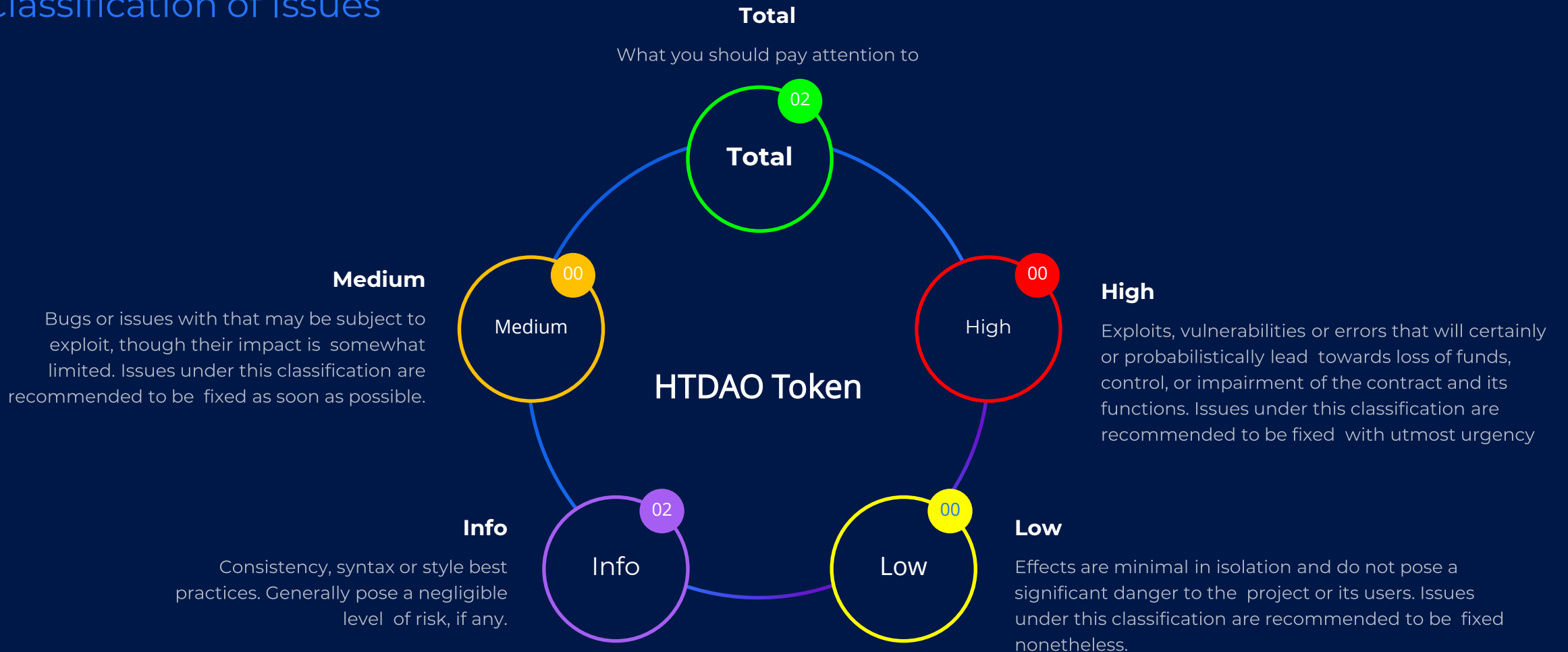
03

We recommend the team to renounce ownership at the right timing if possible, or gradually migrate to a timelock with governing functionalities in respect of transparency and safety considerations.



# Technical Findings Summary

## Classification of Issues



# Findings

Public function that could be declared external



ID	Severity	Contract	Function
01	Informational	HTDAO	Functions: size, getKeyAtIndex, getIndexOfKey

## Description

Gas Optimization. Public function that could be declared external

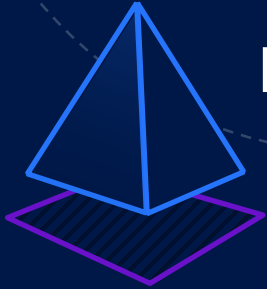
## Recommendation

Public functions that are never called by the contract should be declared external to save gas.



# Findings

## Missing events arithmetic



ID	Severity	Contract	Function
02	Informational	HTDAO	Missing events for setWalletBalance, setMaxBuyTransaction, setMaxSellTransaction, setSwapTokensAtAmount, setSellTransactionMultiplier

### Description

Functions that change critical arithmetic parameters should emit an event.

### Recommendation

Emit corresponding events for critical parameter changes.

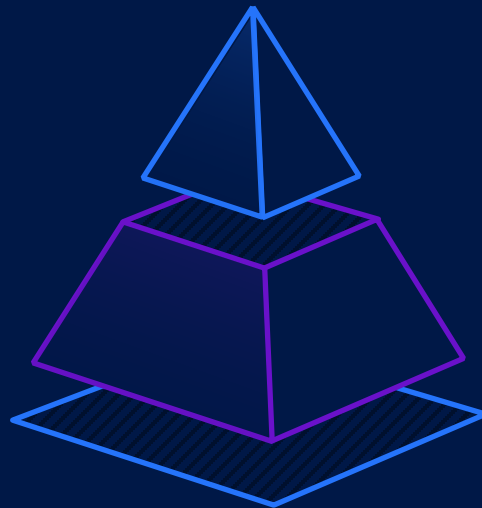


# Privileged Functions (onlyOwner & Others)

Function Name	Parameters	Visibility
✓ renounceOwnership	<ul style="list-style-type: none"><li>▪ none</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ transferOwnership	<ul style="list-style-type: none"><li>▪ address newOwner</li></ul>	<ul style="list-style-type: none"><li>▪ <b>public</b></li></ul>
✓ prepareForPartnerOrExchangeListing	<ul style="list-style-type: none"><li>▪ address_partnerOrExchangeAddress</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ setWalletBalance	<ul style="list-style-type: none"><li>▪ uint256 _maxWalletBalance</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ setMaxBuyTransaction	<ul style="list-style-type: none"><li>▪ uint256 _maxTxn</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ setMaxSellTransaction	<ul style="list-style-type: none"><li>▪ uint256 _maxTxn</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ updateBusdDividendToken	<ul style="list-style-type: none"><li>▪ address _newContract</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ updateMarketingWallet	<ul style="list-style-type: none"><li>▪ address _newWallet</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ setSwapTokensAtAmount	<ul style="list-style-type: none"><li>▪ uint256 _swapAmount</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ setSellTransactionMultiplier	<ul style="list-style-type: none"><li>▪ uint256 _multiplier</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ setTradingIsEnabled	<ul style="list-style-type: none"><li>▪ none</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ setBusdDividendEnabled	<ul style="list-style-type: none"><li>▪ bool _enabled</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ setMarketingEnabled	<ul style="list-style-type: none"><li>▪ bool _enabled</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ setSwapAndLiquifyEnabled	<ul style="list-style-type: none"><li>▪ bool _enabled</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ updatebusdDividendTracker	<ul style="list-style-type: none"><li>▪ address newAddress</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>
✓ updateUniswapV2Router	<ul style="list-style-type: none"><li>▪ address newAddress</li></ul>	<ul style="list-style-type: none"><li>▪ <b>external</b></li></ul>

# Privileged Functions (onlyOwner & Others)

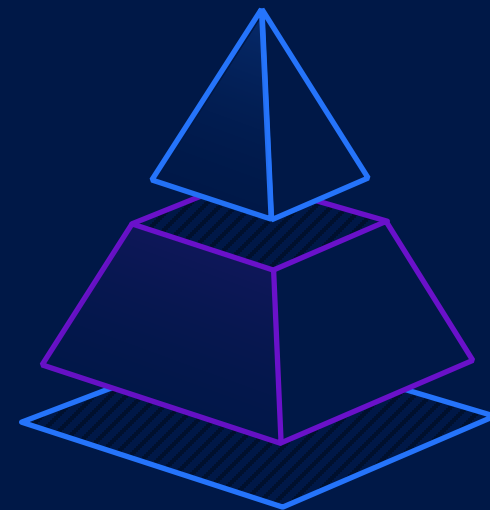
Function Name	Parameters	Visibility
✓ <code>excludeFromFees</code>	▪ <code>address account, bool excluded</code>	▪ <b>public</b>
✓ <code>excludeFromDividend</code>	▪ <code>address account</code>	▪ <b>public</b>
✓ <code>setAutomatedMarketMakerPair</code>	▪ <code>address pair, bool value</code>	▪ <b>external</b>
✓ <code>updateGasForProcessing</code>	▪ <code>uint256 newValue</code>	▪ <b>external</b>
✓ <code>updateMinimumBalanceForDividends</code>	▪ <code>uint256 newMinimumBalance</code>	▪ <b>external</b>
✓ <code>updateClaimWait</code>	▪ <code>uint256 claimWait</code>	▪ <b>external</b>
✓ <code>processDividendTracker</code>	▪ <code>uint256 gas</code>	▪ <b>external</b>





# Statistics

## Liquidity Info



Parameter	Result
Pair Address	0x67dec590025a7ad2eB28FEFE09Fa01aBCD431086
HTDAO Reserves	258,566,511,293,953.5 HTDAO
Reserves, WNT	992.311902788387 WHT
Liquidity Value	\$ 8,752.19



# Statistics

## Token (HTDAO) Holders Info

Parameter	Result
HTDAO Percentage Burnt	12.04 %
HTDAO Amount Burnt	120,363,876,315,087.69 HTDAO
Top 10 Percentage Own	46.67%

Rank	Address	Quantity	Percentage	Value
1	<a href="#">0x67dec590025a7ad2eb28fefe09fa01abcd431086</a>	258,566,511,293,953.5	25.86%	\$8,825.314593...
2	<a href="#">0x00dead</a>	120,363,876,315,087.69	12.04%	\$4,108.223717...
3	<a href="#">0xfb46991e74a2807482e75fa91adfe6888888888</a>	15,000,000,000,000	1.5%	\$511.9755
4	<a href="#">0xba72b5d3380d71d8e63d31a6ea86551ad942136c</a>	14,641,424,761,384.943	1.46%	\$499.73671752...
5	<a href="#">0x96f670d8b112d3e02d3187331ef7bd070b3abd3d</a>	12,099,708,267,902.49	1.21%	\$412.98361268...
6	<a href="#">0x5d9d66c009ae5d62f77af25a4ee622a5b415b1c2</a>	10,000,000,000,000	1%	\$341.317
7	<a href="#">0xc44be70ddc88846cc5d4886fdabc8a7cfdb92c67</a>	9,553,107,455,062.178	0.96%	\$326.06379772...
8	<a href="#">0x5f418ed364e3e6118d6478fe1bd1f7464db74024</a>	9,162,423,148,328.135	0.92%	\$312.72907817...
9	<a href="#">0x52037cebd118645fdcb5e9f7e34094e6c9f38788</a>	8,578,800,865,112.404	0.86%	\$292.80905748...
10	<a href="#">0x077dbe1ab20719b743208704e23a1898d9c1cd39</a>	8,552,119,933,914.867	0.86%	\$291.89839194...



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