

# Smart Contract Security Audit V1

## HAITO Token Smart Contract

<https://www.haito.cc/>

10/10/2022



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# Background

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.

## Project Information

- **Platform:** Ethereum
- **Contract Address:** 0x478780f1e1de1c9f5f8797151b8000996abbdc5e
- **Website:** <https://www.haito.cc/>
- **Twitter:** <https://twitter.com/HAITOCRYPTO>
- **Telegram:** <https://t.me/HAITOCRYPTO>
- **Code Source:** <https://etherscan.io/address/0x478780f1e1de1c9f5f8797151b8000996abbdc5e#code>

## Contracts address deployed to test net (Ethereum )

HAITO Token smart contracts on Ethereum test-net by the auditor to test every function .

<https://goerli.etherscan.io/address/0x2f16d06ca32c329058ef7977c7228518e6ab059a>

## Token Information:

<b>Name</b>	HAITO
<b>Symbol</b>	HAITO
<b>Total supply</b>	1,000,000
<b>Decimals</b>	18
<b>Router</b>	0x7a250d5630B4cF539739dF2C5dAcb4c659F2488D
<b>Reward Token</b>	0xA0b86991c6218b36c1d19D4a2e9Eb0cE3606eB48
<b>Buy Back Fee</b>	0%
<b>Liquidity Fee</b>	1%
<b>Burn Fee</b>	0%
<b>Reward Fee</b>	3%
<b>Max Wallet Limit</b>	30000
<b>Max Transaction Amount</b>	20000
<b>Buy Back Upper Limit Amount</b>	1
<b>Fee Wallet</b>	0x00
<b>Fee Wallet Charity</b>	0x00
<b>Minimum Balance for Dividend</b>	100
<b>Number of token to sell to add liquidity</b>	1000
<b>PCS V2 Pair</b>	0xE897D28720a6a7b7a864E79Eb13DeB5e5b8418EC
<b>PCS V2 Router</b>	0x7a250d5630B4cF539739dF2C5dAcb4c659F2488D

## Executive Summary

According to our assessment, the customer`s solidity smart contract is **Well Secured**.

Well Secured	✓
Secured	
Poor Secured	
Insecure	

Automated checks are with remix IDE. All issues were performed by the team, which included the analysis of code functionality, manual audit found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the audit overview section. The general overview is presented in the Project Information section and all issues found are located in the audit overview section.

Team found 0 critical, 0 high, 0 medium, 3 low, 0 very low-level issues and 1 note in all solidity files of the contract

The files:

HAITO.sol

# File and Function Level Report

## File in Scope:

Contract Name	SHA 256 hash	Contract Address
HAITO.sol	0xA0b86991c6218b36c1d19D4a2e9Eb0cE3606eB48	0x478780f1e1de1c9f5f8797151b8000996abbdc5e

- Contract: HAITO
- Inherit: Context, IERC20, Ownable
- Observation: All passed including security check
- Test Report: passed
- Score: passed
- Conclusion: passed

Function	Test Result	Type / Return Type	Score
_name	✓	Read / public	Passed
_symbol	✓	Read / public	Passed
decimals	✓	Read / public	Passed
totalSupply	✓	Read / public	Passed
allowance	✓	Read / public	Passed
balanceOf	✓	Read / public	Passed
_buybackFee	✓	Read / public	Passed
_burnFee	✓	Read / public	Passed
_liquidityFee	✓	Read / public	Passed
_maxTxAmount	✓	Read / public	Passed
_maxWalletAmount	✓	Read / public	Passed
_rewardFee	✓	Read / public	Passed

_taxFee	✓	Read / public	Passed
_tDividendTotal	✓	Read / public	Passed
pcsV2Router	✓	Read / public	Passed
_tTotal	✓	Read / public	Passed
_walletCharityFee	✓	Read / public	Passed
_walletFee	✓	Read / public	Passed
accumulativeDividendOf	✓	Read / public	Passed
buyBackUpperLimitAmount	✓	Read / public	Passed
claimWait	✓	Read / public	Passed
dividendOf	✓	Read / public	Passed
excludedFromDividends	✓	Read / public	Passed
feeWalletCharity	✓	Read / public	Passed
feeWallet	✓	Read / public	Passed
gasForProcessing	✓	Read / public	Passed
getAccountDividendsInfo	✓	Read / public	Passed
getAccountDividendsInfoAtIndex	✓	Read / public	Passed
getLastProcessedIndex	✓	Read / public	Passed
getNumberOfDividendTokenHolders	✓	Read / public	Passed
geUnlockTime	✓	Read / public	Passed
isExcludedFromReward	✓	Read / public	Passed
isExcludedFromFee	✓	Read / public	Passed
lastClaimTimes	✓	Read / public	Passed
lastProcessedIndex	✓	Read / public	Passed
maxBuybackFee	✓	Read / public	Passed
maxBurnFee	✓	Read / public	Passed
maxLiqFee	✓	Read / public	Passed
maxWalletFee	✓	Read / public	Passed
maxTaxFee	✓	Read / public	Passed

minimumTokenBalanceForDividends	✓	Read / public	Passed
minMxTxPercentage	✓	Read / public	Passed
minMxWalletPercentage	✓	Read / public	Passed
name	✓	Read / public	Passed
owner	✓	Read / public	Passed
numTokensSellToAddToLiquidity	✓	Read / public	Passed
reflectionFromToken	✓	Read / public	Passed
pcsV2Pair	✓	Read / public	Passed
router	✓	Read / public	Passed
rewardToken	✓	Read / public	Passed
swapAndLiquifyEnabled	✓	Read / public	Passed
tokenFromReflection	✓	Read / public	Passed
totalDividendsDistributed	✓	Read / public	Passed
totalFees	✓	Read / public	Passed
withdrawableDividendOf	✓	Read / public	Passed
withdrawnDividendOf	✓	Read / public	Passed
approve	✓	Write / public	Passed
transferFrom	✓	Write / public	Passed
transfer	✓	Write / public	Passed
lock	✓	Write / public	Passed
unLock	✓	Write / public	Passed
claim	✓	Write / public	Passed
deliver	✓	Write / public	Passed
excludeFromDividends	✓	Write / public	Passed
excludeFromReward	✓	Write / public	Passed
excludeFromfee	✓	Write / public	Passed
includeFromReward	✓	Write / public	Passed
includeFromfee	✓	Write / public	Passed



increaseAllowance	✓	Write / public	<b>Passed</b>
decreaseAllowance	✓	Write / public	<b>Passed</b>
processDividendTracker	✓	Write / public	<b>Passed</b>
process	✓	Write / public	<b>Passed</b>
recoverBEP20	✓	Write / public	<b>Passed</b>
setAllFeePercent	✓	Write / public	<b>Passed</b>
renounceOwnership	✓	Write / public	<b>Passed</b>
setBuybackUpperLimit	✓	Write / public	<b>Passed</b>
setFeeWalletCharity	✓	Write / public	<b>Passed</b>
setFeeWallet	✓	Write / public	<b>Passed</b>
setMaxTxPercent	✓	Write / public	<b>Passed</b>
setMaxWalletPercent	✓	Write / public	<b>Passed</b>
setMinimumTokenBalanceForDividends	✓	Write / public	<b>Passed</b>
setSwapAndLiquifyEnabled	✓	Write / public	<b>Passed</b>
setWalletCharityFeeTokenType	✓	Write / public	<b>Passed</b>
setWalletFeeTokenType	✓	Write / public	<b>Passed</b>
transferOwnership	✓	Write / public	<b>Passed</b>
updateClaimWait	✓	Write / public	<b>Passed</b>
updateGasForProcessing	✓	Write / public	<b>Passed</b>
updatePcsV2Router	✓	Write / public	<b>Passed</b>
withdrawDividend	✓	Write / public	<b>Passed</b>

## Issues Checking Status

No.	Issue Description	Checking Status
1	Compiler warnings.	Passed
2	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3	Possible delays in data delivery.	Passed
4	Oracle calls.	Passed
5	Design Logic.	Passed
6	Timestamp dependence.	Passed with notes
7	Integer Overflow and Underflow.	Passed
8	DoS with Revert.	Passed
9	DoS with block gas limit.	Passed with notes
10	Methods execution permissions.	Passed
11	Economy model. If application logic is based on an incorrect economic model, the application would not function correctly and participants would incur financial losses. This type of issue is most often found in bonus rewards systems, Staking and Farming contracts, Vault and Vesting contracts, etc.	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


## Severity Definitions

Risk Level	Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to tokens loss etc.
High	High-level vulnerabilities are difficult to exploit; however, they also have 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 tokens lose
Low	Low-level vulnerabilities are mostly related to outdated, unused etc. code snippets, that can't have significant impact on execution
Note	Lowest-level vulnerabilities, code style violations and info statements can't affect smart contract execution and can be ignored.

## Important Note:

SaferICO certifies that the taxes defined in this audit report are correct. Token Sniffer taxes are wrong. We tested the taxes on Testnet and found taxes written in this report are correct.

Total taxes = 4% (both buy and sell) .

 **Token Sniffer**




**HAITO (HAITO)**  
ETH:0x478780f1e1de1c9f5f8797151b8000996abbd5e

VOTE 2

Links

Etherscan

Chart

 DEX Screener  GeckoTerminal  Etherscan

Deployed

30 Sep 2022 09:57:47 GMT (10 days ago)

Transaction

Creator

CONTRACT

BUBBLE MAP

Smell Test (automated audit) **45/100**

Summary

The audit score 45/100 is a measure of how well the token contract and characteristics meet the criteria for safety. Results may not be applicable if the token is in presale. Automated scanners like this one are limited and not always completely accurate. **A token with a high score may still have hidden malicious code.** The score is not advice and should be considered along with other factors. Always do your own research and consult multiple sources of information. Results are regenerated every 5 minutes.

Swap Analysis (courtesy of [honeypot.is](https://honeypot.is))

✓

Token is sellable (not a honeypot) at this time

✓

Buy fee is less than 5% (4%)

✓

Sell fee is less than 5% (4.6%)

## Audit Findings

### Critical:

No Critical severity vulnerabilities were found.

### High:

No High severity vulnerabilities were found.

### Medium:

No Medium severity vulnerabilities were found.

### Low:

#Contract code size exceeds 24576 bytes

#### Description

Contract implementation is too large in size to be deployed on main net. Ethereum with its spurious dragon release limited the size of the contracts deployable on main net to 24576 bytes.

The size of the contract HAITO.sol goes way above this value.

You can read more here:

<https://github.com/ethereum/EIPs/issues/170>

#### Remediation

Define and use libraries for pure and view functions e.g. We can create a library which contains all the mathematical operations.

Status: **Closed**. The team used to enable optimization at 200 to avoid this issue.

#Pragam version not fixed

#### Description

It is a good practice to lock the solidity version for a live deployment (use 0.8.17 instead of ^0.8.15). contracts should be deployed with the same compiler version and flags that they have been tested the most with. Locking the pragma helps ensure that contracts do not accidentally get deployed using, for example, the latest compiler which may have higher risks of undiscovered bugs. Contracts may also be deployed by others and the pragma indicates the compiler version intended by the original authors.

#### Remediation

Remove the ^ sign to lock the pragma version.

Status: **Acknowledged**

## #Use of block.timestamp for comparisons

### Description

The value of block.timestamp can be manipulated by the miner.  
And conditions with strict equality is difficult to achieve -  
block.timestamp

### Remediation

Avoid use of block.timestamp

Status: **Acknowledged**

### **Very Low:**

No Very Low severity vulnerabilities were found.

### **Notes:**

## #Naming Conventions

### Description

The contract follows a consistent naming convention where we are private variables with leading "\_" and public variables without it. But we have missed to comply to the condition for certain variable names "\_\_burnFee" which is public.

### Remediation

Remove "\_" from external variable names and add it to private variable names.

Status: **Acknowledged**

# Automatic Testing

## 1- Check for security

b4332b38310a6cc3fa1db8bf5589db2a85a67c752dfe0827ea73ceec496a81a9

File: HAITO.... | Language: solidity | Size: 65124 bytes | Date: 2022-10-09T05:59:24.741Z

Critical High Medium Low Note  
0 0 0 0 0



## 2- SOLIDITY STATIC ANALYSIS

SOLIDITY STATIC ANALYSIS

☒ Select all ☒ Autorun Run

Security

☒ Select Security

- ☒ Transaction origin:  
'tx.origin' used
- ☒ Check-effects-interaction:  
Potential reentrancy bugs
- ☒ Inline assembly:  
Inline assembly used
- ☒ Block timestamp:  
Can be influenced by miners
- ☒ Low level calls:  
Should only be used by experienced devs
- ☒ Block hash:  
Can be influenced by miners
- ☒ Selfdestruct:  
Contracts using destructed contract can be broken

Gas & Economy

☒ Select Gas & Economy

- ☒ Gas costs:  
Too high gas requirement of functions
- ☒ This on local calls:  
Invocation of local functions via 'this'
- ☒ Delete dynamic array:  
Use require/assert to ensure complete deletion
- ☒ For loop over dynamic array:  
Iterations depend on dynamic array's size
- ☒ Ether transfer in loop:  
Transferring Ether in a for/while/do-while loop

SOLIDITY STATIC ANALYSIS

ERC

☒ Select ERC

- ☒ ERC20:  
'decimals' should be 'uint8'

Miscellaneous

☒ Select Miscellaneous

- ☒ Constant/View/Pure functions:  
Potentially constant/view/pure functions
- ☒ Similar variable names:  
Variable names are too similar
- ☒ No return:  
Function with 'returns' not returning
- ☒ Guard conditions:  
Ensure appropriate use of require/assert
- ☒ Result not used:  
The result of an operation not used
- ☒ String length:  
Bytes length != String length
- ☒ Delete from dynamic array:  
'delete' leaves a gap in array
- ☒ Data truncated:  
Division on int/uint values truncates the result

## 3- Inheritance graph

```
graph TD; HAITO --> IERC20; HAITO --> Ownable; Ownable --> Context; SafeMath; SafeMathInt; SafeMathUint; IterableMapping; Address; SafeERC20; IUniswapV2Factory; IUniswapV2Router02 --> IUniswapV2Router01;
```

## 4- SOLIDITY UNIT TESTING

### SOLIDITY UNIT TESTING >

Test your smart contract in Solidity.

Select directory to load and generate test files.


Test directory:


☒ Select all


☒ tests/HAITO\_test.sol


Progress: 1 finished (of 1)


**PASS** testSuite (tests/HAITO\_test.sol)

✓ Before all 

✓ Check success 

✓ Check success2 

✓ Check failure 

✓ Check sender and value 

**Result for tests/HAITO\_test.sol**

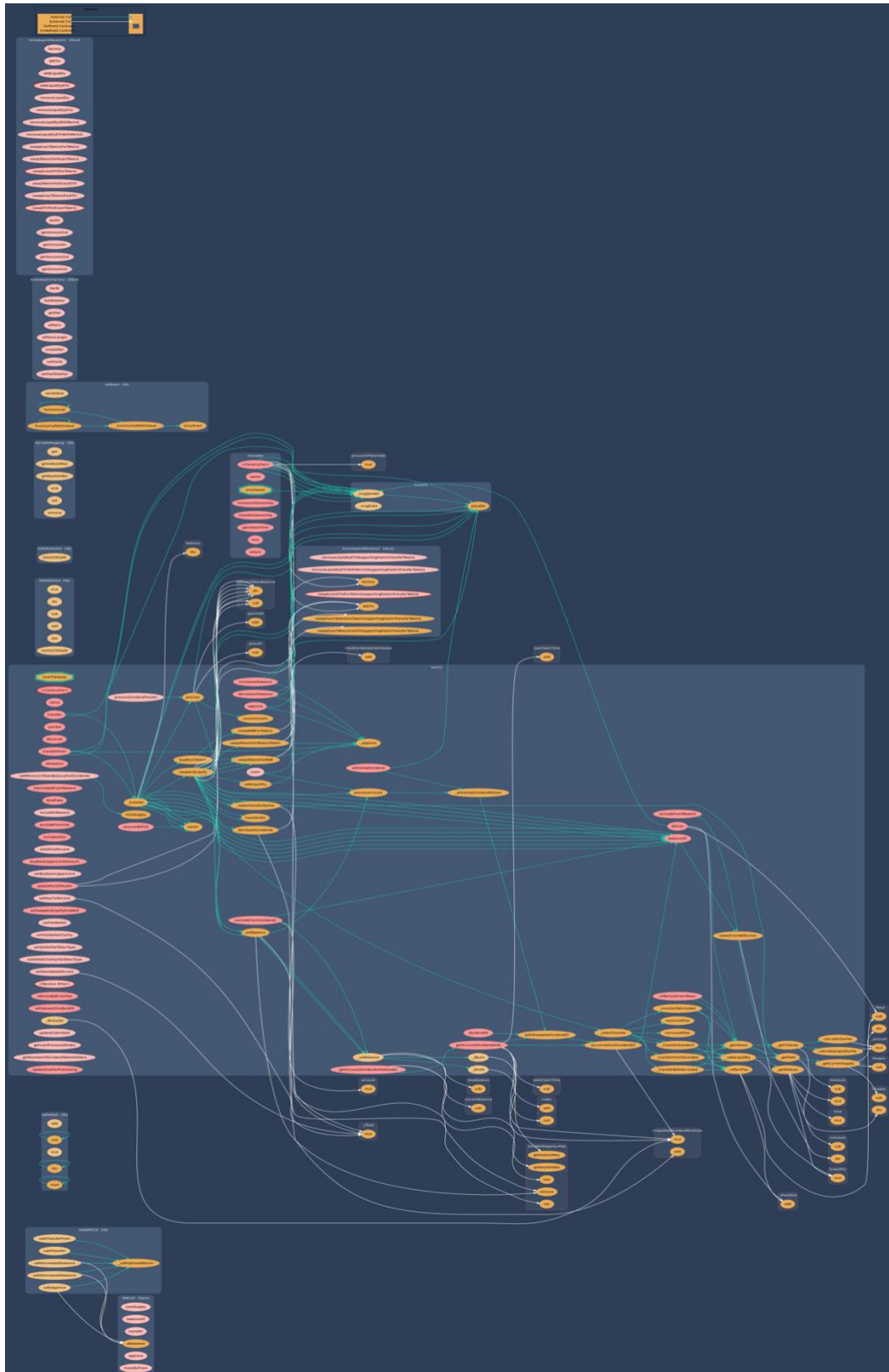
Passed: 5

Failed: 0

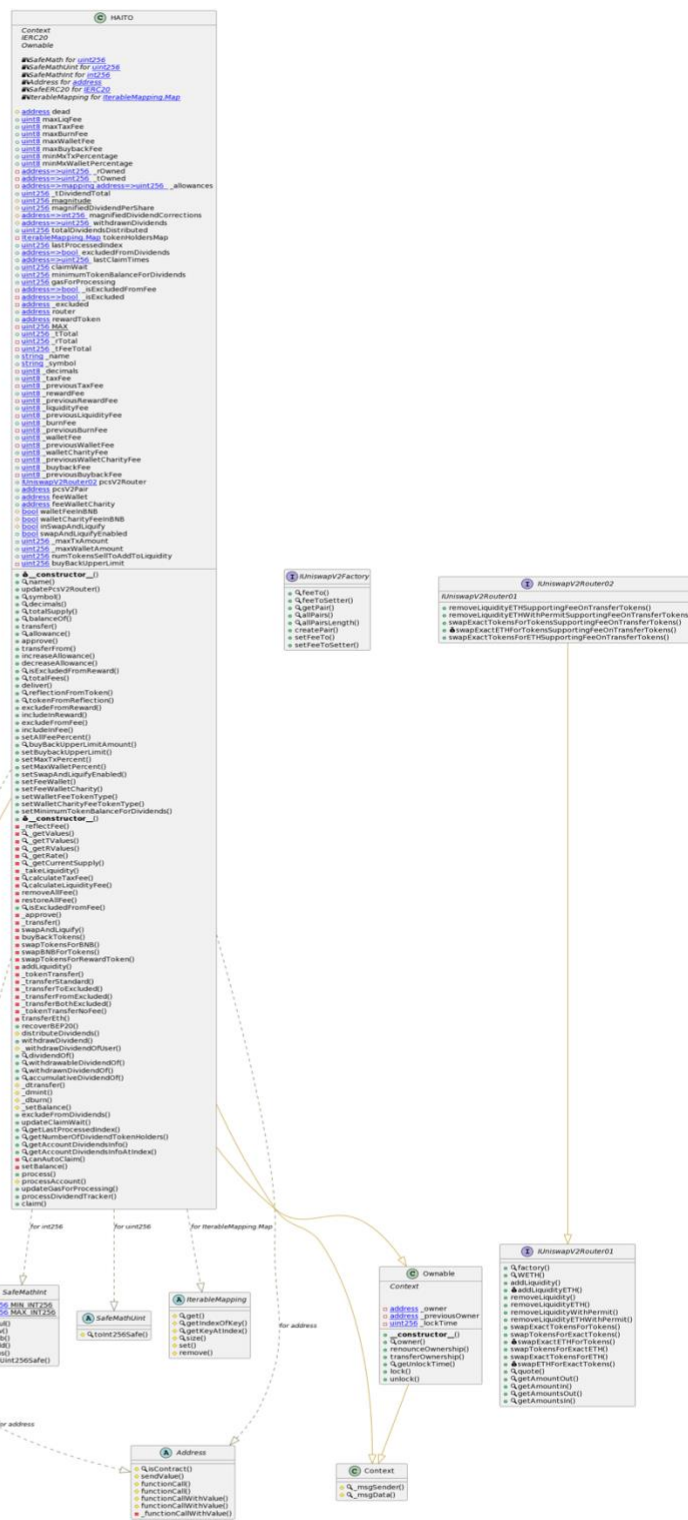
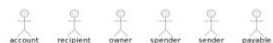
Time Taken: 0.42s



## 5- Call graph



# Unified Modeling Language (UML)



## Functions signature

```
11902160 => _getTValues(uint256)
16279055 => isContract(address)
39509351 => increaseAllowance(address,uint256)
43509138 => div(int256,int256)
75128141 => calculateTaxFee(uint256)
18160ddd => totalSupply()
70a08231 => balanceOf(address)
a9059cbb => transfer(address,uint256)
dd62ed3e => allowance(address,address)
095ea7b3 => approve(address,uint256)
23b872dd => transferFrom(address,address,uint256)
771602f7 => add(uint256,uint256)
b67d77c5 => sub(uint256,uint256)
e31bdc0a => sub(uint256,uint256,string)
c8a4ac9c => mul(uint256,uint256)
a391c15b => div(uint256,uint256)
b745d336 => div(uint256,uint256,string)
f43f523a => mod(uint256,uint256)
71af23e8 => mod(uint256,uint256,string)
119df25f => _msgSender()
8b49d47e => _msgData()
bbe93d91 => mul(int256,int256)
adefc37b => sub(int256,int256)
a5f3c23b => add(int256,int256)
1b5ac4b5 => abs(int256)
744f7c7d => toUint256Safe(int256)
e823b9bf => toInt256Safe(uint256)
268d8e2e => get(Map,address)
b45dad3d => getIndexOfKey(Map,address)
7596720f => getKeyAtIndex(Map,uint256)
b1b533f3 => size(Map)
6b06f325 => set(Map,address,uint256)
0eac8729 => remove(Map,address)
24a084df => sendValue(address,uint256)
a0b5ffb0 => functionCall(address,bytes)
241b5886 => functionCall(address,bytes,string)
2a011594 => functionCallWithValue(address,bytes,uint256)
d525ab8a => functionCallWithValue(address,bytes,uint256,string)
36455e42 => _functionCallWithValue(address,bytes,uint256,string)
d0c407e1 => safeTransfer(IERC20,address,uint256)
5beae096 => safeTransferFrom(IERC20,address,address,uint256)
d6dcec8d => safeApprove(IERC20,address,uint256)
390cc046 => safeIncreaseAllowance(IERC20,address,uint256)
5164ffed => safeDecreaseAllowance(IERC20,address,uint256)
becc5a20 => _callOptionalReturn(IERC20,bytes)
8da5cb5b => owner()
715018a6 => renounceOwnership()
f2fde38b => transferOwnership(address)
b6c52324 => getUnlockTime()
dd467064 => lock(uint256)
a69df4b5 => unlock()
017e7e58 => feeTo()
094b7415 => feeToSetter()
e6a43905 => getPair(address,address)
1e3dd18b => allPairs(uint256)
574f2ba3 => allPairsLength()
c9c65396 => createPair(address,address)
```

```

f46901ed => setFeeTo (address)
a2e74af6 => setFeeToSetter (address)
c45a0155 => factory ()
ad5c4648 => WETH ()
e8e33700 =>
addLiquidity (address, address, uint256, uint256, uint256, uint256, address, uint256)
f305d719 => addLiquidityETH (address, uint256, uint256, uint256, address, uint256)
baa2abde =>
removeLiquidity (address, address, uint256, uint256, uint256, address, uint256)
02751cec => removeLiquidityETH (address, uint256, uint256, uint256, address, uint256)
2195995c =>
removeLiquidityWithPermit (address, address, uint256, uint256, uint256, address, uint256, bool, uint8, bytes32, bytes32)
ded9382a =>
removeLiquidityETHWithPermit (address, uint256, uint256, uint256, address, uint256, bool, uint8, bytes32, bytes32)
38ed1739 => swapExactTokensForTokens (uint256, uint256, address [], address, uint256)
8803dbee => swapTokensForExactTokens (uint256, uint256, address [], address, uint256)
7ff36ab5 => swapExactETHForTokens (uint256, address [], address, uint256)
4a25d94a => swapTokensForExactETH (uint256, uint256, address [], address, uint256)
18cbafe5 => swapExactTokensForETH (uint256, uint256, address [], address, uint256)
fb3bdb41 => swapETHForExactTokens (uint256, address [], address, uint256)
ad615dec => quote (uint256, uint256, uint256)
054d50d4 => getAmountOut (uint256, uint256, uint256)
85f8c259 => getAmountIn (uint256, uint256, uint256)
d06ca61f => getAmountsOut (uint256, address [])
1f00ca74 => getAmountsIn (uint256, address [])
af2979eb =>
removeLiquidityETHSupportingFeeOnTransferTokens (address, uint256, uint256, uint256, address, uint256)
5b0d5984 =>
removeLiquidityETHWithPermitSupportingFeeOnTransferTokens (address, uint256, uint256, uint256, address, uint256, bool, uint8, bytes32, bytes32)
5c11d795 =>
swapExactTokensForTokensSupportingFeeOnTransferTokens (uint256, uint256, address [], address, uint256)
b6f9de95 =>
swapExactETHForTokensSupportingFeeOnTransferTokens (uint256, address [], address, uint256)
791ac947 =>
swapExactTokensForETHSupportingFeeOnTransferTokens (uint256, uint256, address [], address, uint256)
06fdde03 => name ()
caebb843 => updatePcsV2Router (address)
95d89b41 => symbol ()
313ce567 => decimals ()
a457c2d7 => decreaseAllowance (address, uint256)
88f82020 => isExcludedFromReward (address)
13114a9d => totalFees ()
3bd5d173 => deliver (uint256)
4549b039 => reflectionFromToken (uint256, bool)
2d838119 => tokenFromReflection (uint256)
52390c02 => excludeFromReward (address)
3685d419 => includeInReward (address)
437823ec => excludeFromFee (address)
ea2f0b37 => includeInFee (address)
d5f35408 => setAllFeePercent (uint8, uint8, uint8, uint8, uint8, uint8, uint8)
bdc653ef => buyBackUpperLimitAmount ()
82d2a4bb => setBuybackUpperLimit (uint256)

```

```
d543dbeb => setMaxTxPercent(uint256)
82bf293c => setMaxWalletPercent(uint256)
c49b9a80 => setSwapAndLiquifyEnabled(bool)
90d49b9d => setFeeWallet(address)
a79771bb => setFeeWalletCharity(address)
7bd56c8c => setWalletFeeTokenType(bool)
a5f35177 => setWalletCharityFeeTokenType(bool)
5ebf4db9 => setMinimumTokenBalanceForDividends(uint256)
184d894e => _reflectFee(uint256,uint256)
d4780e36 => _getValues(uint256)
1d5671e4 => _getRValues(uint256,uint256,uint256,uint256)
94e10784 => _getRate()
97a9d560 => _getCurrentSupply()
c432df5e => _takeLiquidity(uint256)
cc126a23 => calculateLiquidityFee(uint256)
301370af => removeAllFee()
e7e3e3a7 => restoreAllFee()
5342acb4 => isExcludedFromFee(address)
104e81ff => _approve(address,address,uint256)
30e0789e => _transfer(address,address,uint256)
173865ad => swapAndLiquify(uint256)
fc155d1d => buyBackTokens(uint256)
56c3726b => swapTokensForBNB(uint256)
cf36bec9 => swapBNBForTokens(uint256)
589ad64e => swapTokensForRewardToken(uint256)
9cd441da => addLiquidity(uint256,uint256)
b09bbc79 => _tokenTransfer(address,address,uint256,bool)
2852df65 => _transferStandard(address,address,uint256)
16f1cc83 => _transferToExcluded(address,address,uint256)
c7d9be66 => _transferFromExcluded(address,address,uint256)
6ff6cdf4 => _transferBothExcluded(address,address,uint256)
de621616 => _tokenTransferNoFee(address,address,uint256)
e9bb84c2 => transferEth(address,uint256)
efa08806 => recoverBEP20(address,uint256)
3243c791 => distributeDividends(uint256)
6a474002 => withdrawDividend()
373de4aa => _withdrawDividendOfUser(address)
91b89fba => dividendOf(address)
a8b9d240 => withdrawableDividendOf(address)
aafd847a => withdrawnDividendOf(address)
27ce0147 => accumulativeDividendOf(address)
721bf495 => _dtransfer(address,address,uint256)
19f93152 => _dmint(address,uint256)
8f7e2e92 => _dburn(address,uint256)
7eae6759 => _setBalance(address,uint256,uint256)
31e79db0 => excludeFromDividends(address)
e98030c7 => updateClaimWait(uint256)
e7841ec0 => getLastProcessedIndex()
64b0f653 => getNumberOfDividendTokenHolders()
ad56c13c => getAccountDividendsInfo(address)
f27fd254 => getAccountDividendsInfoAtIndex(uint256)
77fdb837 => canAutoClaim(uint256)
e8a6a289 => setBalance(address,uint256,uint256)
ffb2c479 => process(uint256)
bc4c4b37 => processAccount(address,bool)
871c128d => updateGasForProcessing(uint256)
700bb191 => processDividendTracker(uint256)
4e71d92d => claim()
```

# Automatic general report

## Files Description Table

File Name	SHA-1 Hash
/Users/macbook/Desktop/smart contracts/HAITO.sol	2396f344f26f1531da187c6a8a41ee34569d5531

## Contracts Description Table

Contract	Type	Bases	
:-----:-----:-----:-----			
L	**Function Name**	**Visibility**	**Mutability**
**Modifiers**			
**IERC20**   Interface			
L   totalSupply	External	!	NO!
L   balanceOf	External	!	NO!
L   transfer	External	! 	NO!
L   allowance	External	!	NO!
L   approve	External	! 	NO!
L   transferFrom	External	! 	NO!
**SafeMath**   Library			
L   add	Internal		
L   sub	Internal		
L   sub	Internal		
L   mul	Internal		
L   div	Internal		
L   div	Internal		
L   mod	Internal		
L   mod	Internal		
**Context**   Implementation			
L   _msgSender	Internal		
L   _msgData	Internal		
**SafeMathInt**   Library			
L   mul	Internal		
L   div	Internal		
L   sub	Internal		
L   add	Internal		
L   abs	Internal		
L   toUint256Safe	Internal		
**SafeMathUint**   Library			
L   toInt256Safe	Internal		
**IterableMapping**   Library			
L   get	Internal		
L   getIndexOfKey	Internal		

```

| L | getKeyAtIndex | Internal | 🔒 | | |
| L | size | Internal | 🔒 | | |
| L | set | Internal | 🔒 | 🔒 | |
| L | remove | Internal | 🔒 | 🔒 | |
| | | |
| **Address** | Library | | |
| L | isContract | Internal | 🔒 | | |
| L | sendValue | Internal | 🔒 | 🔒 | |
| L | functionCall | Internal | 🔒 | 🔒 | |
| L | functionCall | Internal | 🔒 | 🔒 | |
| L | functionCallWithValue | Internal | 🔒 | 🔒 | |
| L | functionCallWithValue | Internal | 🔒 | 🔒 | |
| L | _functionCallWithValue | Private | 🔒 | 🔒 | |
| | | |
| **SafeERC20** | Library | | |
| L | safeTransfer | Internal | 🔒 | 🔒 | |
| L | safeTransferFrom | Internal | 🔒 | 🔒 | |
| L | safeApprove | Internal | 🔒 | 🔒 | |
| L | safeIncreaseAllowance | Internal | 🔒 | 🔒 | |
| L | safeDecreaseAllowance | Internal | 🔒 | 🔒 | |
| L | _callOptionalReturn | Private | 🔒 | 🔒 | |
| | | |
| **Ownable** | Implementation | Context | | |
| L | <Constructor> | Public | ! | 🔒 | NO! |
| L | owner | Public | ! | NO! |
| L | renounceOwnership | Public | ! | 🔒 | onlyOwner |
| L | transferOwnership | Public | ! | 🔒 | onlyOwner |
| L | geUnlockTime | Public | ! | NO! |
| L | lock | Public | ! | 🔒 | onlyOwner |
| L | unlock | Public | ! | 🔒 | NO! |
| | | |
| **IUniswapV2Factory** | Interface | | |
| L | feeTo | External | ! | NO! |
| L | feeToSetter | External | ! | NO! |
| L | getPair | External | ! | NO! |
| L | allPairs | External | ! | NO! |
| L | allPairsLength | External | ! | NO! |
| L | createPair | External | ! | 🔒 | NO! |
| L | setFeeTo | External | ! | 🔒 | NO! |
| L | setFeeToSetter | External | ! | 🔒 | NO! |
| | | |
| **IUniswapV2Router01** | Interface | | |
| L | factory | External | ! | NO! |
| L | WETH | External | ! | NO! |
| L | addLiquidity | External | ! | 🔒 | NO! |
| L | addLiquidityETH | External | ! | 🔒 | NO! |
| L | removeLiquidity | External | ! | 🔒 | NO! |
| L | removeLiquidityETH | External | ! | 🔒 | NO! |
| L | removeLiquidityWithPermit | External | ! | 🔒 | NO! |
| L | removeLiquidityETHWithPermit | External | ! | 🔒 | NO! |
| L | swapExactTokensForTokens | External | ! | 🔒 | NO! |
| L | swapTokensForExactTokens | External | ! | 🔒 | NO! |
| L | swapExactETHForTokens | External | ! | 🔒 | NO! |
| L | swapTokensForExactETH | External | ! | 🔒 | NO! |
| L | swapExactTokensForETH | External | ! | 🔒 | NO! |
| L | swapETHForExactTokens | External | ! | 🔒 | NO! |
| L | quote | External | ! | NO! |
| L | getAmountOut | External | ! | NO! |

```



```

| L | getAmountIn | External ! | | NO! |
| L | getAmountsOut | External ! | | NO! |
| L | getAmountsIn | External ! | | NO! |
| | | |
| **IUniswapV2Router02** | Interface | IUniswapV2Router01 | | |
| L | removeLiquidityETHSupportingFeeOnTransferTokens | External ! | ⬛ | NO! |
| L | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External ! | ⬛ |
NO! |
| L | swapExactTokensForTokensSupportingFeeOnTransferTokens | External ! | ⬛ | NO! |
|
| L | swapExactETHForTokensSupportingFeeOnTransferTokens | External ! | ⬛ | NO! |
| L | swapExactTokensForETHSupportingFeeOnTransferTokens | External ! | ⬛ | NO! |
| | | |
| **HAITO** | Implementation | Context, IERC20, Ownable | | |
| L | <Constructor> | Public ! | ⬛ | NO! |
| L | name | Public ! | | NO! |
| L | updatePcsV2Router | Public ! | ⬛ | onlyOwner |
| L | symbol | Public ! | | NO! |
| L | decimals | Public ! | | NO! |
| L | totalSupply | Public ! | | NO! |
| L | balanceOf | Public ! | | NO! |
| L | transfer | Public ! | ⬛ | NO! |
| L | allowance | Public ! | | NO! |
| L | approve | Public ! | ⬛ | NO! |
| L | transferFrom | Public ! | ⬛ | NO! |
| L | increaseAllowance | Public ! | ⬛ | NO! |
| L | decreaseAllowance | Public ! | ⬛ | NO! |
| L | isExcludedFromReward | Public ! | | NO! |
| L | totalFees | Public ! | | NO! |
| L | deliver | Public ! | ⬛ | NO! |
| L | reflectionFromToken | Public ! | | NO! |
| L | tokenFromReflection | Public ! | | NO! |
| L | excludeFromReward | Public ! | ⬛ | onlyOwner |
| L | includeInReward | External ! | ⬛ | onlyOwner |
| L | excludeFromFee | Public ! | ⬛ | onlyOwner |
| L | includeInFee | Public ! | ⬛ | onlyOwner |
| L | setAllFeePercent | External ! | ⬛ | onlyOwner |
| L | buyBackUpperLimitAmount | Public ! | | NO! |
| L | setBuybackUpperLimit | External ! | ⬛ | onlyOwner |
| L | setMaxTxPercent | External ! | ⬛ | onlyOwner |
| L | setMaxWalletPercent | External ! | ⬛ | onlyOwner |
| L | setSwapAndLiquifyEnabled | Public ! | ⬛ | onlyOwner |
| L | setFeeWallet | External ! | ⬛ | onlyOwner |
| L | setFeeWalletCharity | External ! | ⬛ | onlyOwner |
| L | setWalletFeeTokenType | External ! | ⬛ | onlyOwner |
| L | setWalletCharityFeeTokenType | External ! | ⬛ | onlyOwner |
| L | setMinimumTokenBalanceForDividends | External ! | ⬛ | onlyOwner |
| L | <Receive Ether> | External ! | ⬛ | NO! |
| L | _reflectFee | Private ! | ⬛ | |
| L | _getValues | Private ! | | |
| L | _getTValues | Private ! | | |
| L | _getRValues | Private ! | | |
| L | _getRate | Private ! | | |
| L | _getCurrentSupply | Private ! | | |
| L | _takeLiquidity | Private ! | ⬛ | |
| L | calculateTaxFee | Private ! | | |
| L | calculateLiquidityFee | Private ! | | |
| L | removeAllFee | Private ! | ⬛ | |

```



L	restoreAllFee	Private					
L	isExcludedFromFee	Public	!		NO!		
L	_approve	Private					
L	_transfer	Private					
L	swapAndLiquify	Private			lockTheSwap		
L	buyBackTokens	Private			lockTheSwap		
L	swapTokensForBNB	Private					
L	swapBNBForTokens	Private					
L	swapTokensForRewardToken	Private					
L	addLiquidity	Private					
L	_tokenTransfer	Private					
L	_transferStandard	Private					
L	_transferToExcluded	Private					
L	_transferFromExcluded	Private					
L	_transferBothExcluded	Private					
L	_tokenTransferNoFee	Private					
L	transferEth	Private					
L	recoverBEP20	Public	!		onlyOwner		
L	distributeDividends	Internal					
L	withdrawDividend	Public	!		NO!		
L	_withdrawDividendOfUser	Internal					
L	dividendOf	Public	!	NO!			
L	withdrawableDividendOf	Public	!	NO!			
L	withdrawnDividendOf	Public	!	NO!			
L	accumulativeDividendOf	Public	!	NO!			
L	_dtransfer	Internal					
L	_dmint	Internal					
L	_dburn	Internal					
L	_setBalance	Internal					
L	excludeFromDividends	Public	!		onlyOwner		
L	updateClaimWait	External	!		onlyOwner		
L	getLastProcessedIndex	External	!	NO!			
L	getNumberOfDividendTokenHolders	External	!	NO!			
L	getAccountDividendsInfo	Public	!	NO!			
L	getAccountDividendsInfoAtIndex	Public	!	NO!			
L	canAutoClaim	Private					
L	setBalance	Private					
L	process	Public	!		NO!		
L	processAccount	Internal					
L	updateGasForProcessing	Public	!		onlyOwner		
L	processDividendTracker	External	!		NO!		
L	claim	External	!		NO!		

## Legend

Symbol	Meaning
	Function can modify state
	Function is payable

## Conclusion

The contracts are written systematically. Team found no critical issues. So, it is good to go for production.

Since possible test cases can be unlimited and developer level documentation (code flow diagram with function level description) not provided, for such an extensive smart contract protocol, we provide no such guarantee of future outcomes. We have used all the latest static tools and manual observations to cover maximum possible test cases to scan Everything.

Security state of the reviewed contract is “Well Secured”.

- ✓ No mint function.
- ✓ No volatile code.
- ✓ No high severity issues were found.

# Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as of 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 the team on the basis of what it says or doesn't say, or how team produced it, and it is important for you to conduct your own independent investigations before making any decisions. team go into more detail on this in the below disclaimer below – please make sure to read it in full.

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