



Smart Contract Audit

FOR

Figment

DATED : 08 Mar 23'



AUDIT SUMMARY

Project name – Figment

Date: 08 March, 2023

Scope of Audit- Audit Ace was consulted to conduct the smart contract audit of the solidity source codes.

Audit Status: Passed with Medium Risk

Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	0	0	0	1	0
Acknowledged	0	0	0	0	0
Resolved	0	0	0	0	0



USED TOOLS

Tools:

1- Manual Review:

a line by line code review has been performed by audit ace team.

2- BSC Test Network:

all tests were done on BSC Test network, each test has its transaction has attached to it.

3- Slither : Static Analysis

Testnet Link: all tests were done using this contract, tests are done on BSC Testnet

<https://testnet.bscscan.com/token/0x32d19d97a85f45644e2bccb654e5aa277868feda>



Token Information

Token Name : Figment

Token Symbol: Figma

Decimals: 18

Token Supply: 1,000,000,000

Token Address:

0xcEAa73aAAAE02c8A1175F7273741648B5086F5b7

Checksum:

40f8b00e12adf454bf3d074d0e915c10a291721b

Owner:

0xb971ff557D6d40ef75248257DC27382c73Dd4057



TOKEN OVERVIEW

Fees:

Buy Fees: 3%

Sell Fees: 3%

Transfer Fees: 0%

Fees Privilege: Owner

Ownership : Owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Privileges: including and excluding from fees



AUDIT METHODOLOGY

The auditing process will follow a routine as special considerations by Auditace:

- Review of the specifications, sources, and instructions provided to Auditace to make sure the contract logic meets the intentions of the client without exposing the user's funds to risk.
 - Manual review of the entire codebase by our experts, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
 - Specification comparison is the process of checking whether the code does what the specifications, sources, and instructions provided to Auditace describe.
 - Test coverage analysis determines whether the test cases are covering the code and how much code is exercised when we run the test cases.
 - Symbolic execution is analysing a program to determine what inputs cause each part of a program to execute.
 - Reviewing the codebase to improve maintainability, security, and control based on the established industry and academic practices.
-

VULNERABILITY CHECKLIST

- | | |
|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
|  Return values of low-level calls |  Gasless Send |
|  Private modifier |  Using block.timestamp |
|  Multiple Sends |  Re-entrancy |
|  Using Suicide |  Tautology or contradiction |
|  Gas Limitand Loops |  Timestamp Dependence |
|  Address hardcoded |  Revert/require functions |
|  Exception Disorder |  Use of tx.origin |
|  Using inline assembly |  Integer overflow/underflow |
|  Divide before multiply |  Dangerous strict equalities |
|  Missing Zero Address Validation |  Using SHA3 |
|  Compiler version not fixed |  Using throw |
-

CLASSIFICATION OF RISK

Severity

Description

◆ Critical

These vulnerabilities could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.

◆ High-Risk

A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.

◆ Medium-Risk

A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.

◆ Low-Risk

A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.

◆ Gas Optimization /Suggestion

A vulnerability that has an informational character but is not affecting any of the code.

Findings

Severity

Found

◆ Critical

0

◆ High-Risk

0

◆ Medium-Risk

0

◆ Low-Risk

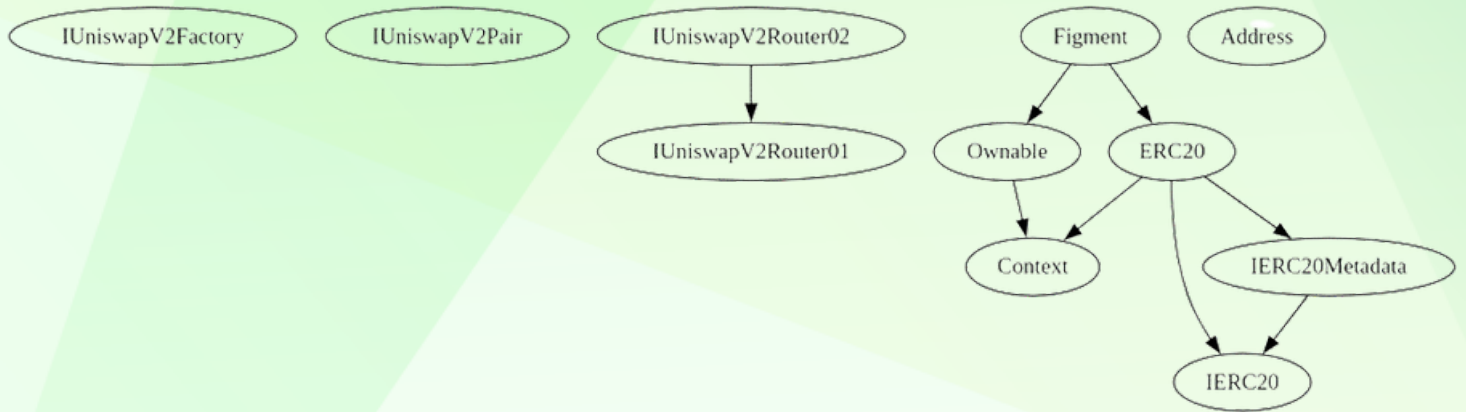
1

◆ Gas Optimization / Suggestions

0

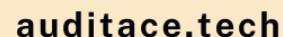


INHERITANCE TREE



POINTS TO NOTE

- Owner is not able to change fees more than 3% for buy/sell, transfer taxes are 0
 - Owner is able to set max buy/sell/transfer/holding amount, this amount has a minimum limit of 1% of total supply (safeguard)
 - Owner is not able to blacklist an arbitrary wallet
 - Owner is not able to disable trades
 - **Owner must enable trading in order for investors to be able to buy/sell/transfer (enableTrading feature)**
 - Owner is not able to mint new tokens
-



Contract	Type	Bases			
----- ----- ----- ----- -----					
L	**Function Name**	**Visibility**	**Mutability**	**Modifiers**	
	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
	IUniswapV2Pair	Interface			
L	name	External	!		NO
L	symbol	External	!		NO
L	decimals	External	!		NO
L	totalSupply	External	!		NO
L	balanceOf	External	!		NO
L	allowance	External	!		NO
L	approve	External	!	⊗	NO
L	transfer	External	!	⊗	NO
L	transferFrom	External	!	⊗	NO
L	DOMAIN_SEPARATOR	External	!		NO
L	PERMIT_TYPEHASH	External	!		NO
L	nonces	External	!		NO
L	permit	External	!	⊗	NO
L	MINIMUM_LIQUIDITY	External	!		NO
L	factory	External	!		NO
L	token0	External	!		NO
L	token1	External	!		NO
L	getReserves	External	!		NO
L	price0CumulativeLast	External	!		NO
L	price1CumulativeLast	External	!		NO
L	kLast	External	!		NO
L	mint	External	!	⊗	NO
L	burn	External	!	⊗	NO
L	swap	External	!	⊗	NO
L	skim	External	!	⊗	NO
L	sync	External	!	⊗	NO
L	initialize	External	!	⊗	NO

CONTRACT ASSESMENT


|||||


| ****IUniswapV2Router01**** | Interface | |||


| | factory | External ! | | NO! |


| | WETH | External ! | | NO! |

| | addLiquidity | External ! |  | NO! |

| | addLiquidityETH | External ! |  | NO! |

| | removeLiquidity | External ! |  | NO! |


| | removeLiquidityETH | External ! |  | NO! |

| | removeLiquidityWithPermit | External ! |  | NO! |

| | removeLiquidityETHWithPermit | External ! |  | NO! |


| | swapExactTokensForTokens | External ! |  | NO! |

| | swapTokensForExactTokens | External ! |  | NO! |

| | swapExactETHForTokens | External ! |  | NO! |

| | swapTokensForExactETH | External ! |  | NO! |

| | swapExactTokensForETH | External ! |  | NO! |

| | swapETHForExactTokens | External ! |  | NO! |

| | quote | External ! | | NO! |

| | getAmountOut | External ! | | NO! |

| | getAmountIn | External ! | | NO! |

| | getAmountsOut | External ! | | NO! |

| | getAmountsIn | External ! | | NO! |

|||||

| ****IUniswapV2Router02**** | Interface | IUniswapV2Router01 |||

| | removeLiquidityETHSupportingFeeOnTransferTokens | External ! |  | NO! |

| | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External ! |  | NO! |

| | swapExactTokensForTokensSupportingFeeOnTransferTokens | External ! |  | NO! |

| | swapExactETHForTokensSupportingFeeOnTransferTokens | External ! |  | NO! |

| | swapExactTokensForETHSupportingFeeOnTransferTokens | External ! |  | NO! |

|||||

| ****IERC20**** | Interface | |||

| | totalSupply | External ! | | NO! |

| | balanceOf | External ! | | NO! |

| | transfer | External ! |  | NO! |

| | allowance | External ! | | NO! |

| | approve | External ! |  | NO! |

| | transferFrom | External ! |  | NO! |

|||||

| ****IERC20Metadata**** | Interface | IERC20 |||

| | name | External ! | | NO! |

| | symbol | External ! | | NO! |

| | decimals | External ! | | NO! |

CONTRACT ASSESMENT

```

||||| | |
| **Address** | Library | |||
|  | isContract | Internal | | |
|  | sendValue | Internal | | |
|  | functionCall | Internal | | |
|  | functionCall | Internal | | |
|  | functionCallWithValue | Internal | | |
|  | functionCallWithValue | Internal | | |
|  | functionStaticCall | Internal | | |
|  | functionStaticCall | Internal | | |
|  | functionDelegateCall | Internal | | |
|  | functionDelegateCall | Internal | | |
|  | verifyCallResultFromTarget | Internal | | |
|  | verifyCallResult | Internal | | |
|  | _revert | Private | | |
|||||
| **Context** | Implementation | |||
|  | _msgSender | Internal | | |
|  | _msgData | Internal | | |
|||||
| **Ownable** | Implementation | Context | |||
|  | <Constructor> | Public | | NO |
|  | owner | Public | | NO |
|  | renounceOwnership | Public | | onlyOwner |
|  | transferOwnership | Public | | onlyOwner |
|||||
| **ERC20** | Implementation | Context, IERC20, IERC20Metadata | |||
|  | <Constructor> | Public | | NO |
|  | name | Public | | NO |
|  | symbol | Public | | NO |
|  | decimals | Public | | NO |
|  | totalSupply | Public | | NO |
|  | balanceOf | Public | | NO |
|  | transfer | Public | | NO |
|  | allowance | Public | | NO |
|  | approve | Public | | NO |
|  | transferFrom | Public | | NO |
|  | increaseAllowance | Public | | NO |
|  | decreaseAllowance | Public | | NO |
|  | _transfer | Internal | | |
|  | _mint | Internal | | |
|  | _burn | Internal | | |

```

CONTRACT ASSESMENT

```

|  | _approve | Internal |  |  | | |
|  | _beforeTokenTransfer | Internal |  |  | |
|  | _afterTokenTransfer | Internal |  |  | |
|  |  |  |  |  |  |
|  | **Figment** | Implementation | ERC20, Ownable | | |
|  | <Constructor> | Public |  |  | ERC20 |
|  | <Receive Ether> | External |  |  | NO |  |
|  | claimStuckTokens | External |  |  | onlyOwner |
|  | excludeFromFees | External |  |  | onlyOwner |
|  | isExcludedFromFees | Public |  | | NO |  |
|  | isExcludedFromLimits | External |  | | NO |  |
|  | setExcludedFromLimits | External |  |  | onlyOwner |
|  | lockFees | External |  |  | onlyOwner |
|  | setFees | External |  |  | onlyOwner |
|  | changeFIGMAburn_FBRprizepoolFunding_Wallet | External |  |  | onlyOwner |
|  | enableTrading | External |  |  | onlyOwner |
|  | _transfer | Internal |  |  | |
|  | setSwapEnabled | External |  |  | onlyOwner |
|  | setMaxTxPercent | External |  |  | onlyOwner |
|  | setMaxWalletSize | External |  |  | onlyOwner |
|  | getMaxTX | External |  | | NO |  |
|  | getMaxWallet | External |  | | NO |  |
|  | setSwapTokensAtAmount | External |  |  | onlyOwner |
|  | swapAndSendMarketing | Private |  |  | |

```

| Symbol | Meaning |

| :-----: | ----- |

|  | Function can modify state |

|  | Function is payable |



STATIC ANALYSIS

```
Address.functionDelegateCall(address,bytes,string) (contracts/Token.sol#488-501) is never used and should be removed
Address.functionStaticCall(address,bytes) (contracts/Token.sol#449-459) is never used and should be removed
Address.functionStaticCall(address,bytes,string) (contracts/Token.sol#461-474) is never used and should be removed
Address.isContract(address) (contracts/Token.sol#375-377) is never used and should be removed
Address.verifyCallResult(bool,bytes,string) (contracts/Token.sol#521-531) is never used and should be removed
Address.verifyCallResultFromTarget(address,bool,bytes,string) (contracts/Token.sol#503-519) is never used and should be removed
Context._msgData() (contracts/Token.sol#556-559) is never used and should be removed
ERC20._burn(address,uint256) (contracts/Token.sol#746-761) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code

Pragma version"0.8.17 (contracts/Token.sol#7) necessitates a version too recent to be trusted. Consider deploying with 0.6.12/0.7.6/0.8.16
solc-0.8.18 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity

Low level call in Address.sendValue(address,uint256) (contracts/Token.sol#379-390):
- (success) = recipient.call(value: amount)() (contracts/Token.sol#385)
Low level call in Address.functionCallWithValue(address,bytes,uint256,string) (contracts/Token.sol#427-447):
- (success,returndata) = target.call(value: value)(data) (contracts/Token.sol#437-439)
Low level call in Address.functionStaticCall(address,bytes,string) (contracts/Token.sol#461-474):
- (success,returndata) = target.staticcall(data) (contracts/Token.sol#466)
Low level call in Address.functionDelegateCall(address,bytes,string) (contracts/Token.sol#488-501):
- (success,returndata) = target.delegatecall(data) (contracts/Token.sol#493)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls

Function IUniswapV2Pair.DOMAIN_SEPARATOR() (contracts/Token.sol#69) is not in mixedCase
Function IUniswapV2Pair.PERMIT_TYPEHASH() (contracts/Token.sol#71) is not in mixedCase
Function IUniswapV2Pair.MINIMUM_LIQUIDITY() (contracts/Token.sol#102) is not in mixedCase
Function IUniswapV2Router01.WETH() (contracts/Token.sol#142) is not in mixedCase
Parameter Figment.setFees(uint16,uint16). FIGMATokensburnFundingFeeOnBuy (contracts/Token.sol#929) is not in mixedCase
Parameter Figment.setFees(uint16,uint16). FBRprizepoolFundingFeeOnSell (contracts/Token.sol#930) is not in mixedCase
Function Figment.changeFIGMAburn_FBRprizepoolFunding_Wallet(address). FIGMAburn_FBRprizepoolFunding_Wallet (contracts/Token.sol#948-963) is not in mixedCase
Parameter Figment.changeFIGMAburn_FBRprizepoolFunding_Wallet(address). FIGMAburn_FBRprizepoolFunding_Wallet (contracts/Token.sol#949) is not in mixedCase
Parameter Figment.setSwapEnabled(bool). enabled (contracts/Token.sol#1044) is not in mixedCase
Variable Figment.FIGMATokensburnFundingFeeOnBuy (contracts/Token.sol#800) is not in mixedCase
Variable Figment.FBRprizepoolFundingFeeOnSell (contracts/Token.sol#801) is not in mixedCase
Constant Figment.maxFIGMATokensburnFundingFeeOnBuy (contracts/Token.sol#803) is not in UPPER_CASE_WITH_UNDERSCORES
Constant Figment.maxFBRprizepoolFundingFeeOnSell (contracts/Token.sol#804) is not in UPPER_CASE_WITH_UNDERSCORES
Variable Figment.BuySellFeesAreLocked (contracts/Token.sol#806) is not in mixedCase
Variable Figment.FIGMAburn_FBRprizepoolFunding_Wallet (contracts/Token.sol#810) is not in mixedCase
Variable Figment._ownerChosenDividend (contracts/Token.sol#1083-1084) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

Redundant expression "this (contracts/Token.sol#557)" inContext (contracts/Token.sol#551-560)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements

Variable IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountADesired (contracts/Token.sol#147) is too similar to IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountBDesired (contracts/Token.sol#148)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

Figment.creator (contracts/Token.sol#798) should be immutable
Figment.pancakeswapV2Pair (contracts/Token.sol#792) should be immutable
Figment.pancakeswapV2Router (contracts/Token.sol#791) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
```

Result => A static analysis of contract's source code has been performed using slither,

No major issues were found in the output



FUNCTIONAL TESTING

Router (PCS V2):

0xD99D1c33F9fC3444f8101754aBC46c52416550D1

All the functionalities have been tested, no issues were found

1- Adding liquidity (passed):

<https://testnet.bscscan.com/tx/0x203b56d568934d11d33e760665a5a2704c1930e594f85965efdb782b2fd88fbb>

2- Buying when excluded (0% tax) (passed):

<https://testnet.bscscan.com/tx/0x0b879e5d62884ceb62917125e322ed7f4e88b33c1b46e72c9e26cd5e77158922>

3- Selling when excluded (0% tax) (passed):

<https://testnet.bscscan.com/tx/0x3f7ab213acdf2158df997c7c4a31e6ec45e9379871635158c02e0296ec2f38cd>

4- Transferring when excluded from fees (0% tax) (passed):

<https://testnet.bscscan.com/tx/0xf205d5f27b69f191cf3d4b66c665bf5093bdbbd3da42447e3e040feff9990e78>

5- Buying when not excluded (1% tax) (passed):

<https://testnet.bscscan.com/tx/0x21894fa214107fe2c4e7aaadba12fd9980dd86dd7f12da8f6d1239aba3824d9e>

6- Selling when not excluded (3% tax) (passed):

<https://testnet.bscscan.com/tx/0x5b13c5e18b6cbf0969226fa4b3b4cd27fdadd1daa7d59690a215c179f927634b>



FUNCTIONAL TESTING

7- Transferring when not excluded from fees (0% tax) (passed):

<https://testnet.bscscan.com/tx/0xbbd4ac61b96bbb191f47b66768f95e24126975ee7e6133ce37aa4f6ef24b292e>

8-Internal swap (passed):

prize pool wallet received ETH

<https://testnet.bscscan.com/address/0x7ed37dfd3167dc26d266dceaca22eaf1f53aaea#internaltx>

MANUAL TESTING

Issue: redundant code at `_transfer` function

Type : **Code Smell**

Function: `_transfer`

Line: 731-738

Severity: **Low**

Overview: since `_totalFeesOnBuy` is equal to `FIGMAtokensburnFundingFeeOnBuy` and `_totalFeesOnSell` is equal to `FBRprizepoolFundingFeeOnSell` there is no need to calculate `marketingShare`

```
uint256 totalFee = totalFeesOnBuy + totalFeesOnSell; //@audit redundant

uint256 marketingShare = FIGMAtokensburnFundingFeeOnBuy +
    FBRprizepoolFundingFeeOnSell; //@audit redundant

//@audit marketingShare is always 100%
if (marketingShare > 0) {
    uint256 marketingTokens = (contractTokenBalance *
        marketingShare) / totalFee;
    swapAndSendMarketing(marketingTokens);
}

swapping = false;
}
```

Recommendations

To address the issue identified in this audit, we recommend the following:

- use **swapAndSendMarketing** directly with contract's token balance

```
if (
    canSwap &&
    !swapping &&
    to == pancakeswapV2Pair &&
    totalFeesOnBuy + totalFeesOnSell > 0 &&
    swapEnabled
) {
    swapping = true;
    swapAndSendMarketing(balanceOf(address(this)));
    swapping = false;
}
```



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