



Cyberscope

# Audit Report

## **Robot Figure**

March 2024

Network    ETH

Address    0x23FAc187fB15D13295dFa9486c83af5c1Abd7b5A

Audited by    © cyberscope

# Analysis

● Critical   ● Medium   ● Minor / Informative   ● Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Passed
●	OTUT	Transfers User's Tokens	Passed
●	ELFM	Exceeds Fees Limit	Passed
●	MT	Mints Tokens	Passed
●	BT	Burns Tokens	Passed
●	BC	Blacklists Addresses	Passed

# Diagnostics

● Critical ● Medium ● Minor / Informative

Severity	Code	Description	Status
●	IDI	Immutable Declaration Improvement	Unresolved
●	MEM	Misleading Error Messages	Unresolved
●	MEE	Missing Events Emission	Unresolved
●	RRS	Redundant Require Statement	Unresolved
●	RSML	Redundant SafeMath Library	Unresolved
●	L02	State Variables could be Declared Constant	Unresolved
●	L04	Conformance to Solidity Naming Conventions	Unresolved

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## Review

Contract Name	FIGURE
Compiler Version	v0.8.23+commit.f704f362
Optimization	200 runs
Explorer	<a href="https://etherscan.io/address/0x23fac187fb15d13295dfa9486c83af5c1abd7b5a">https://etherscan.io/address/0x23fac187fb15d13295dfa9486c83af5c1abd7b5a</a>
Address	0x23fac187fb15d13295dfa9486c83af5c1abd7b5a
Network	ETH
Symbol	FIGURE
Decimals	9
Total Supply	100,000,000

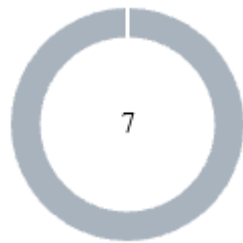
## Audit Updates

Initial Audit	21 Mar 2024
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## Source Files

Filename	SHA256
FIGURE.sol	30a85d27c151951ed9bd0f8759c030272734fd02dc302bbc6d78e10497b36e98

## Findings Breakdown



● Critical	0
● Medium	0
● Minor / Informative	7

Severity	Unresolved	Acknowledged	Resolved	Other
● Critical	0	0	0	0
● Medium	0	0	0	0
● Minor / Informative	7	0	0	0

## IDI - Immutable Declaration Improvement

<b>Criticality</b>	Minor / Informative
<b>Location</b>	FIGURE.sol#L157
<b>Status</b>	Unresolved

### Description

The contract declares state variables that their value is initialized once in the constructor and are not modified afterwards. The `immutable` is a special declaration for this kind of state variables that saves gas when it is defined.

```
_taxWallet
```

### Recommendation

By declaring a variable as immutable, the Solidity compiler is able to make certain optimizations. This can reduce the amount of storage and computation required by the contract, and make it more gas-efficient.

## MEM - Misleading Error Messages

Criticality	Minor / Informative
Location	FIGURE.sol#L219,315,316,324
Status	Unresolved

### Description

The contract is using misleading error messages. These error messages do not accurately reflect the problem, making it difficult to identify and fix the issue. As a result, the users will not be able to find the root cause of the error.

```
require(!bots[from] && !bots[to])
require(_msgSender()==_taxWallet)
require(_newFee<=_finalBuyTax && _newFee<=_finalSellTax)
```

### Recommendation

The team is suggested to provide a descriptive message to the errors. This message can be used to provide additional context about the error that occurred or to explain why the contract execution was halted. This can be useful for debugging and for providing more information to users that interact with the contract.



## MEE - Missing Events Emission

<b>Criticality</b>	Minor / Informative
<b>Location</b>	FIGURE.sol#L317,318
<b>Status</b>	Unresolved

### Description

The contract performs actions and state mutations from external methods that do not result in the emission of events. Emitting events for significant actions is important as it allows external parties, such as wallets or dApps, to track and monitor the activity on the contract. Without these events, it may be difficult for external parties to accurately determine the current state of the contract.

```
_finalBuyTax=_newFee;  
_finalSellTax=_newFee;
```

### Recommendation

It is recommended to include events in the code that are triggered each time a significant action is taking place within the contract. These events should include relevant details such as the user's address and the nature of the action taken. By doing so, the contract will be more transparent and easily auditable by external parties. It will also help prevent potential issues or disputes that may arise in the future.

## RRS - Redundant Require Statement

Criticality	Minor / Informative
Location	FIGURE.sol#L29
Status	Unresolved

### Description

The contract utilizes a `require` statement within the `add` function aiming to prevent overflow errors. This function is designed based on the SafeMath library's principles. In Solidity version 0.8.0 and later, arithmetic operations revert on overflow and underflow, making the overflow check within the function redundant. This redundancy could lead to extra gas costs and increased complexity without providing additional security.

```
function add(uint256 a, uint256 b) internal pure returns (uint256) {  
    uint256 c = a + b;  
    require(c >= a, "SafeMath: addition overflow");  
    return c;  
}
```

### Recommendation

It is recommended to remove the `require` statement from the `add` function since the contract is using a Solidity pragma version equal to or greater than 0.8.0. By doing so, the contract will leverage the built-in overflow and underflow checks provided by the Solidity language itself, simplifying the code and reducing gas consumption. This change will uphold the contract's integrity in handling arithmetic operations while optimizing for efficiency and cost-effectiveness.

## RSML - Redundant SafeMath Library

Criticality	Minor / Informative
Location	FIGURE.sol
Status	Unresolved

### Description

SafeMath is a popular Solidity library that provides a set of functions for performing common arithmetic operations in a way that is resistant to integer overflows and underflows.

Starting with Solidity versions that are greater than or equal to 0.8.0, the arithmetic operations revert to underflow and overflow. As a result, the native functionality of the Solidity operations replaces the SafeMath library. Hence, the usage of the SafeMath library adds complexity, overhead and increases gas consumption unnecessarily in cases where the explanatory error message is not used.

```
library SafeMath {...}
```

### Recommendation

The team is advised to remove the SafeMath library in cases where the revert error message is not used. Since the version of the contract is greater than `0.8.0` then the pure Solidity arithmetic operations produce the same result.

If the previous functionality is required, then the contract could exploit the `unchecked { ... }` statement.

Read more about the breaking change on

<https://docs.soliditylang.org/en/v0.8.16/080-breaking-changes.html#solidity-v0-8-0-breaking-changes>.

## L02 - State Variables could be Declared Constant

Criticality	Minor / Informative
Location	FIGURE.sol#L124,125,128,129,130,139,140
Status	Unresolved

### Description

State variables can be declared as constant using the constant keyword. This means that the value of the state variable cannot be changed after it has been set. Additionally, the constant variables decrease gas consumption of the corresponding transaction.

```
uint256 private _initialBuyTax=22
uint256 private _initialSellTax=22
uint256 private _reduceBuyTaxAt=22
uint256 private _reduceSellTaxAt=22
uint256 private _preventSwapBefore=20
uint256 public _taxSwapThreshold= 1000000 * 10**_decimals
uint256 public _maxTaxSwap= 1000000 * 10**_decimals
```

### Recommendation

Constant state variables can be useful when the contract wants to ensure that the value of a state variable cannot be changed by any function in the contract. This can be useful for storing values that are important to the contract's behavior, such as the contract's address or the maximum number of times a certain function can be called. The team is advised to add the constant keyword to state variables that never change.

## L04 - Conformance to Solidity Naming Conventions

<b>Criticality</b>	Minor / Informative
<b>Location</b>	FIGURE.sol#L105,133,134,135,136,137,138,139,140,314
<b>Status</b>	Unresolved

### Description

The Solidity style guide is a set of guidelines for writing clean and consistent Solidity code. Adhering to a style guide can help improve the readability and maintainability of the Solidity code, making it easier for others to understand and work with.

The followings are a few key points from the Solidity style guide:

1. Use camelCase for function and variable names, with the first letter in lowercase (e.g., myVariable, updateCounter).
2. Use PascalCase for contract, struct, and enum names, with the first letter in uppercase (e.g., MyContract, UserStruct, ErrorEnum).
3. Use uppercase for constant variables and enums (e.g., MAX\_VALUE, ERROR\_CODE).
4. Use indentation to improve readability and structure.
5. Use spaces between operators and after commas.
6. Use comments to explain the purpose and behavior of the code.
7. Keep lines short (around 120 characters) to improve readability.

```
function WETH() external pure returns (address);
uint8 private constant _decimals = 9
uint256 private constant _tTotal = 100000000 * 10**_decimals
string private constant _name = unicode"Figure AI"
string private constant _symbol = unicode"FIGURE"
uint256 public _maxTxAmount = 2000000 * 10**_decimals
uint256 public _maxWalletSize = 2000000 * 10**_decimals
uint256 public _taxSwapThreshold= 1000000 * 10**_decimals
uint256 public _maxTaxSwap= 1000000 * 10**_decimals
uint256 _newFee
```

## Recommendation

By following the Solidity naming convention guidelines, the codebase increased the readability, maintainability, and makes it easier to work with.

Find more information on the Solidity documentation

<https://docs.soliditylang.org/en/v0.8.17/style-guide.html#naming-convention>.

## Functions Analysis

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
<b>Context</b>	Implementation			
	_msgSender	Internal		
<b>IERC20</b>	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
<b>SafeMath</b>	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		

<b>Ownable</b>	Implementation	Context		
		Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
<b>IUniswapV2Factory</b>	Interface			
	createPair	External	✓	-
<b>IUniswapV2Router02</b>	Interface			
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
	factory	External		-
	WETH	External		-
	addLiquidityETH	External	Payable	-
<b>FIGURE</b>	Implementation	Context, IERC20, Ownable		
		Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-

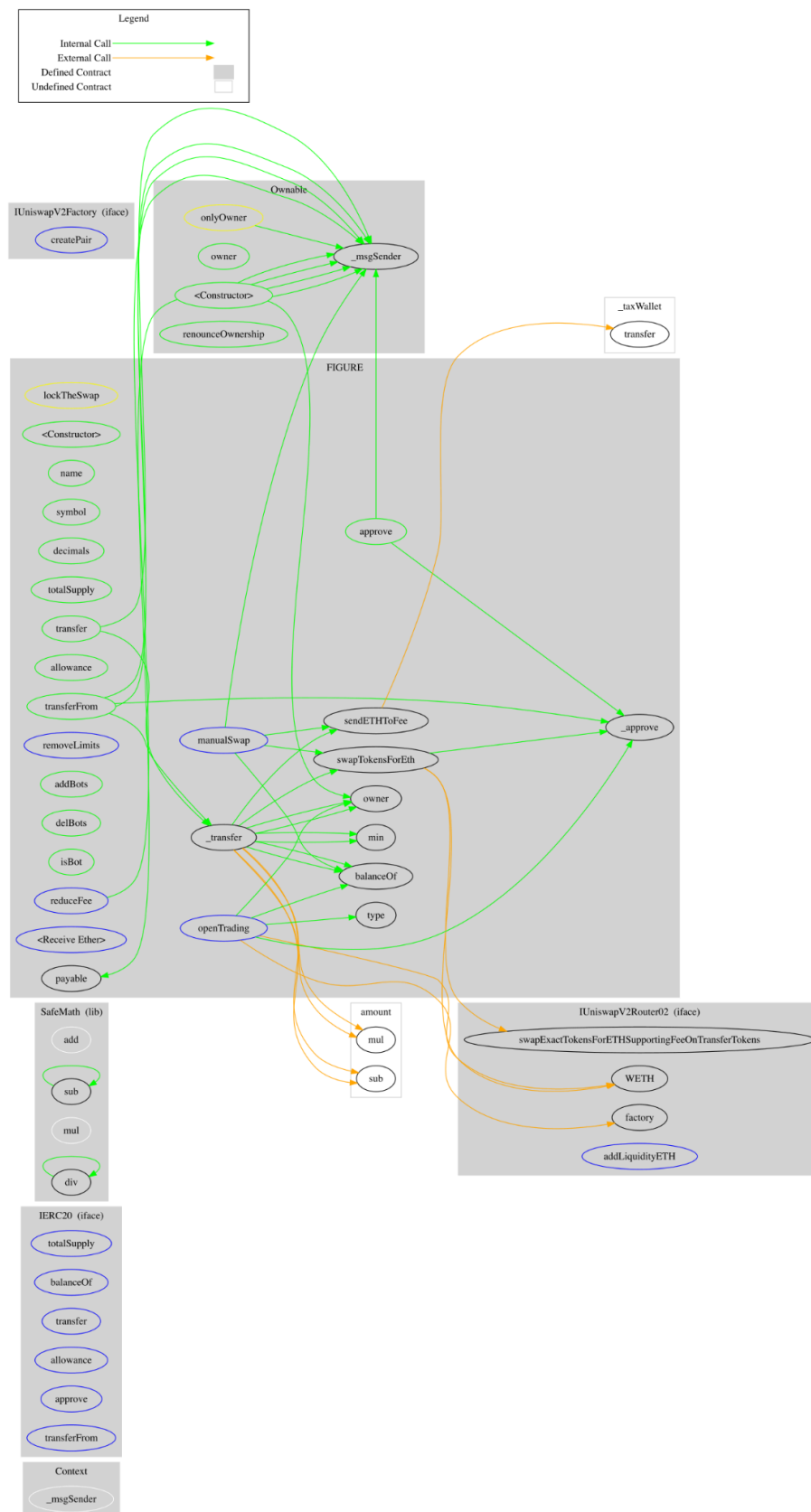


	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	_approve	Private	✓	
	_transfer	Private	✓	
	min	Private		
	swapTokensForEth	Private	✓	lockTheSwap
	removeLimits	External	✓	onlyOwner
	sendETHToFee	Private	✓	
	addBots	Public	✓	onlyOwner
	delBots	Public	✓	onlyOwner
	isBot	Public		-
	openTrading	External	✓	onlyOwner
	reduceFee	External	✓	-
		External	Payable	-
	manualSwap	External	✓	-

## Inheritance Graph



# Flow Graph



## Summary

Robot Figure contract implements a token mechanism. This audit investigates security issues, business logic concerns, and potential improvements. Robot Figure is an interesting project that has a friendly and growing community. The Smart Contract analysis reported no compiler errors or critical issues. There is also a limit of max 22% fees. The contract includes a mechanism to automatically disable buy and sell fees after 22 buy or sell transactions respectively.

The contract's ownership has been renounced. The information regarding the transaction can be accessed through the following link:

<https://etherscan.io/tx/0xf0ca8c304b390810f0fa9c629e0a2945d20af3e449c5ace7fd768a60663d649>.

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# About Cyberscope

Cyberscope is a blockchain cybersecurity company that was founded with the vision to make web3.0 a safer place for investors and developers. Since its launch, it has worked with thousands of projects and is estimated to have secured tens of millions of investors' funds.

Cyberscope is one of the leading smart contract audit firms in the crypto space and has built a high-profile network of clients and partners.



**The Cyberscope team**

<https://www.cyberscope.io>