



Cyberscope

Audit Report

MEDUSA

October 2023

Network ETH

Address 0x41ba0861237b7b429562bd2eefa9c190c8e50dfb

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
●	L03	Redundant Statements	Unresolved
●	L19	Stable Compiler Version	Unresolved

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Review

Contract Name	MEDUSATOKEN
Compiler Version	v0.8.19+commit.7dd6d404
Optimization	200 runs
Explorer	https://etherscan.io/address/0x41baa861237b7b429562bd2eefa9c190c8e50dfb
Address	0x41baa861237b7b429562bd2eefa9c190c8e50dfb
Network	ETH
Symbol	MEDUSA
Decimals	18
Total Supply	100,000,000,000,000

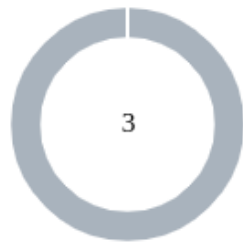
Audit Updates

Initial Audit	18 Oct 2023
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Source Files

Filename	SHA256
MEDUSATOKEN.sol	00eef67408caa39b277f85d0524d3df2a8787f8ba9303a087267dc64a404ab28

Findings Breakdown



● Critical	0
● Medium	0
● Minor / Informative	3

Severity	Unresolved	Acknowledged	Resolved	Other
● Critical	0	0	0	0
● Medium	0	0	0	0
● Minor / Informative	3	0	0	0

IDI - Immutable Declaration Improvement

Criticality	Minor / Informative
Location	MEDUSATOKEN.sol#L94,95
Status	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.

```
_name  
_symbol
```

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.

L03 - Redundant Statements

Criticality	Minor / Informative
Location	MEDUSATOKEN.sol#L83
Status	Unresolved

Description

Redundant statements are statements that are unnecessary or have no effect on the contract's behavior. These can include declarations of variables or functions that are not used, or assignments to variables that are never used.

As a result, it can make the contract's code harder to read and maintain, and can also increase the contract's size and gas consumption, potentially making it more expensive to deploy and execute.

```
contract MEDUSATOKEN is Context, IERC20, IERC20Metadata,
Ownable{
    mapping (address => uint256) private _balances;

    mapping (address => mapping (address => uint256)) private
_allowances;

    uint256 private _totalSupply;
    ...

    _allowances[owner][spender] = amount;
    emit Approval(owner, spender, amount);
}

function _beforeTokenTransfer(address from, address to,
uint256 amount) internal virtual { }
```

Recommendation

To avoid redundant statements, it's important to carefully review the contract's code and remove any statements that are unnecessary or not used. This can help to improve the clarity and efficiency of the contract's code.

By removing unnecessary or redundant statements from the contract's code, the clarity and efficiency of the contract will be improved. Additionally, the size and gas consumption will be reduced.

L19 - Stable Compiler Version

Criticality	Minor / Informative
Location	MEDUSATOKEN.sol#L3
Status	Unresolved

Description

The `^` symbol indicates that any version of Solidity that is compatible with the specified version (i.e., any version that is a higher minor or patch version) can be used to compile the contract. The version lock is a mechanism that allows the author to specify a minimum version of the Solidity compiler that must be used to compile the contract code. This is useful because it ensures that the contract will be compiled using a version of the compiler that is known to be compatible with the code.

```
pragma solidity ^0.8.19;
```

Recommendation

The team is advised to lock the pragma to ensure the stability of the codebase. The locked pragma version ensures that the contract will not be deployed with an unexpected version. An unexpected version may produce vulnerabilities and undiscovered bugs. The compiler should be configured to the lowest version that provides all the required functionality for the codebase. As a result, the project will be compiled in a well-tested LTS (Long Term Support) environment.

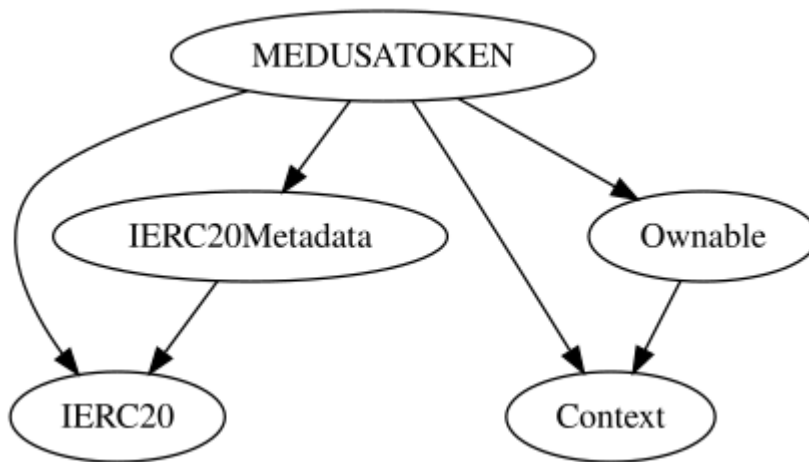
Functions Analysis

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
IERC20Metadata	Interface	IERC20		
	name	External		-
	symbol	External		-
	decimals	External		-
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
Ownable	Implementation	Context		

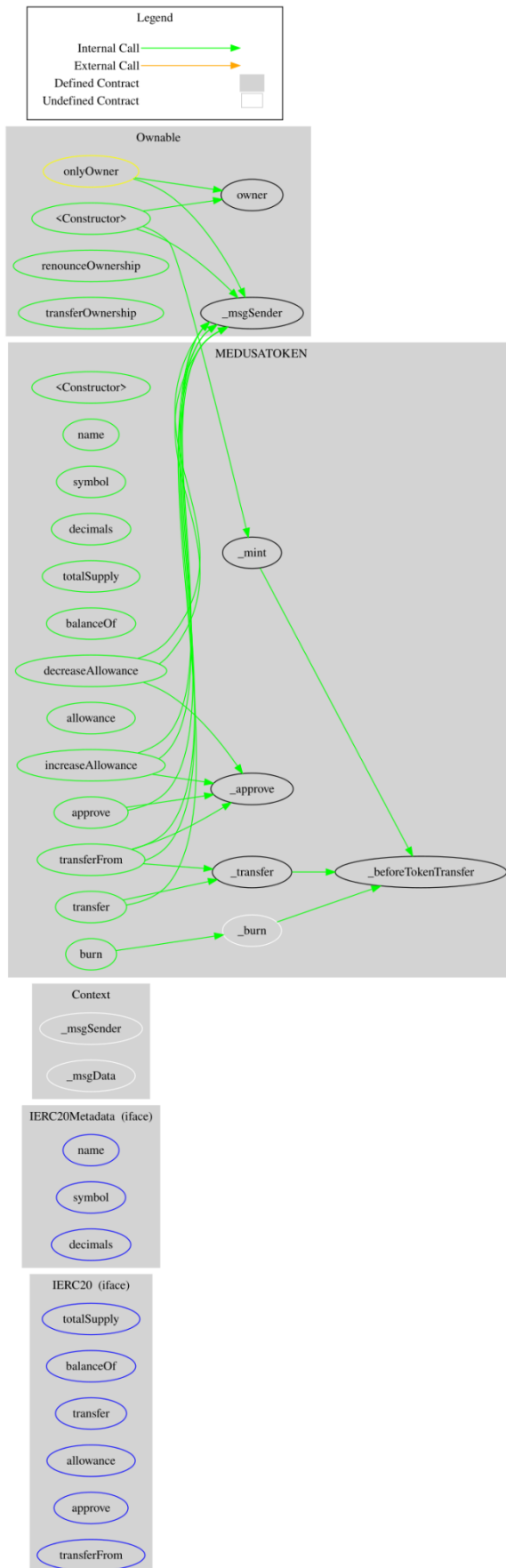
		Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
MEDUSATOKE N	Implementation	Context, IERC20, IERC20Meta data, Ownable		
		Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	_transfer	Internal	✓	
	_mint	Internal	✓	
	_burn	Internal	✓	
	burn	Public	✓	onlyOwner

	_approve	Internal	✓	
	_beforeTokenTransfer	Internal	✓	

Inheritance Graph



Flow Graph



Summary

MEDUSA contract implements a token mechanism. This audit investigates security issues, business logic concerns and potential improvements. MEDUSA is an interesting project that has a friendly and growing community. The Smart Contract analysis reported no compiler error or critical issues. The contract Owner can access some admin functions that can not be used in a malicious way to disturb the users' transactions.

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Blockchain technology and cryptographic assets present a high level of ongoing risk. Cyberscope's position is that each company and individual are responsible for their own due diligence and continuous security. Cyberscope's goal is to help reduce the attack vectors and the high level of variance associated with utilizing new and consistently changing technologies and in no way claims any guarantee of security or functionality of the technology we agree to analyze. The assessment services provided by Cyberscope are subject to dependencies and are under continuing development. You agree that your access and/or use including but not limited to any services reports and materials will be at your sole risk on an as-is where-is and as-available basis. Cryptographic tokens are emergent technologies and carry with them high levels of technical risk and uncertainty. The assessment reports could include false positives, false negatives and other unpredictable results. The services may access and depend upon multiple layers of third parties.

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>