Smart Contract Security Audit V1

Mekan Token Smart Contract Audit

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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
- **Name**: Mekan Token (MKN)
- **Language** : Solidity
- **Contract Address**: 0x762e8755edcb68912ec823bea6f29094b1bb57fb
- **Code Source**: https://etherscan.io/address/0x762e8755edcb68912ec823bea6f29094b1bb57fb#code

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, 0 low, 0 very low-level issues and 1 note in all solidity files of the contract

The files:

MekanToken.sol

Audit Score:

99% secure

File and Function Level Report

File in Scope:

Contract Name	SHA 256 hash	Contract Address
MekanToken.sol	ecb968e4e63628c119bc03b9c65429fd7cf78a13	0x762e8755edcb68912ec823bea6f29094b1bb57fb

- Contract: MekanToken
- Inherit: Context, IERC20Metadata, Ownable
- Observation: All passed including security check
- Test Report: passed
- Score: passed
- Conclusion: passed

Function	Test Result	Type / Return Type	Score
balanceOf	✓	Read / public	**Passed**
allowance	✓	Read / public	**Passed**
Supply	✓	Read / public	**Passed**
decimal	✓	Read / public	**Passed**
totalSupply	✓	Read / public	**Passed**
name	✓	Read / public	**Passed**
owner	✓	Read / public	**Passed**
symbol	✓	Read / public	**Passed**
transferOwnership	✓	Write / public	**Passed**
renounceOwnership	✓	Write / public	**Passed**
burn	✓	Write / public	**Passed**
transfer	✓	Write / public	**Passed**
approve	✓	Write / public	**Passed**
transferFrom	✓	Write / public	**Passed**

decreaseAllowance	✓	Write / public	**Passed**
increaseAllowance	✓	Write / public	**Passed**

Issues Checking Status

SWC Attack Analysis

The Smart Contract Weakness Classification Registry (SWC Registry) is an implementation of the weakness classification scheme proposed in EIP-1470. It is loosely aligned to the terminologies and structure used in the Common Weakness Enumeration (CWE) for more info check https://swcregistry.io/

No.	Issue Description	Checking Status
136	Unencrypted Private Data On-Chain	**Passed**
135	Code With No Effects	**Passed**
134	Message call with hardcoded gas amount	**Passed**
133	Hash Collisions With Multiple Variable Length Arguments	**Passed**
132	Unexpected Ether balance	**Passed**
131	Presence of unused variables	**Passed**
130	Right-To-Left-Override control character (U+202E)	**Passed**
129	Typographical Error	**Passed**
128	DoS with block gas limit.	**Passed**
127	Arbitrary Jump with Function Type Variable	**Passed**
126	Insufficient Gas Griefing	**Passed**
125	Incorrect Inheritance Order	**Passed**
124	Write to Arbitrary Storage Location	**Passed**
123	Requirement Violation	**Passed**
122	Lack of Proper Signature Verification	**Passed**
121	Missing Protection against Signature Replay Attacks	**Passed**
120	Weak Sources of Randomness from Chain Attributes	**Passed**
119	Shadowing State Variables	**Passed**

118	Incorrect Constructor Name	**Passed**
117	Signature Malleability	**Passed**
116	Block values as a proxy for time	**Passed**
115	Authorization through tx.origin	**Passed**
114	Transaction Order Dependence	**Passed**
113	DoS with Failed Call	**Passed**
112	Delegatecall to Untrusted Callee	**Passed**
111	Use of Deprecated Solidity Functions	**Passed**
110	Assert Violation	**Passed**
109	Uninitialized Storage Pointer	**Passed**
108	State Variable Default Visibility	**Passed**
107	Reentrancy	**Passed**
106	Unprotected SELFDESTRUCT Instruction	**Passed**
105	Unprotected Ether Withdrawal	**Passed**
104	Unchecked Call Return Value	**Passed**
103	Floating Pragma	**Passed**
102	Outdated Compiler Version	**Passed**
101	Integer Overflow and Underflow	**Passed**
100	Function Default Visibility	**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.

Audit Findings

Critical:

No Critical severity vulnerabilities were found.

High:

No High severity vulnerabilities were found.

Medium:

No Medium severity vulnerabilities were found.

Low:

No Low severity vulnerabilities were found.

Very Low:

No Very Low severity vulnerabilities were found.

Notes:

#OUTDATED COMPILER VERSION

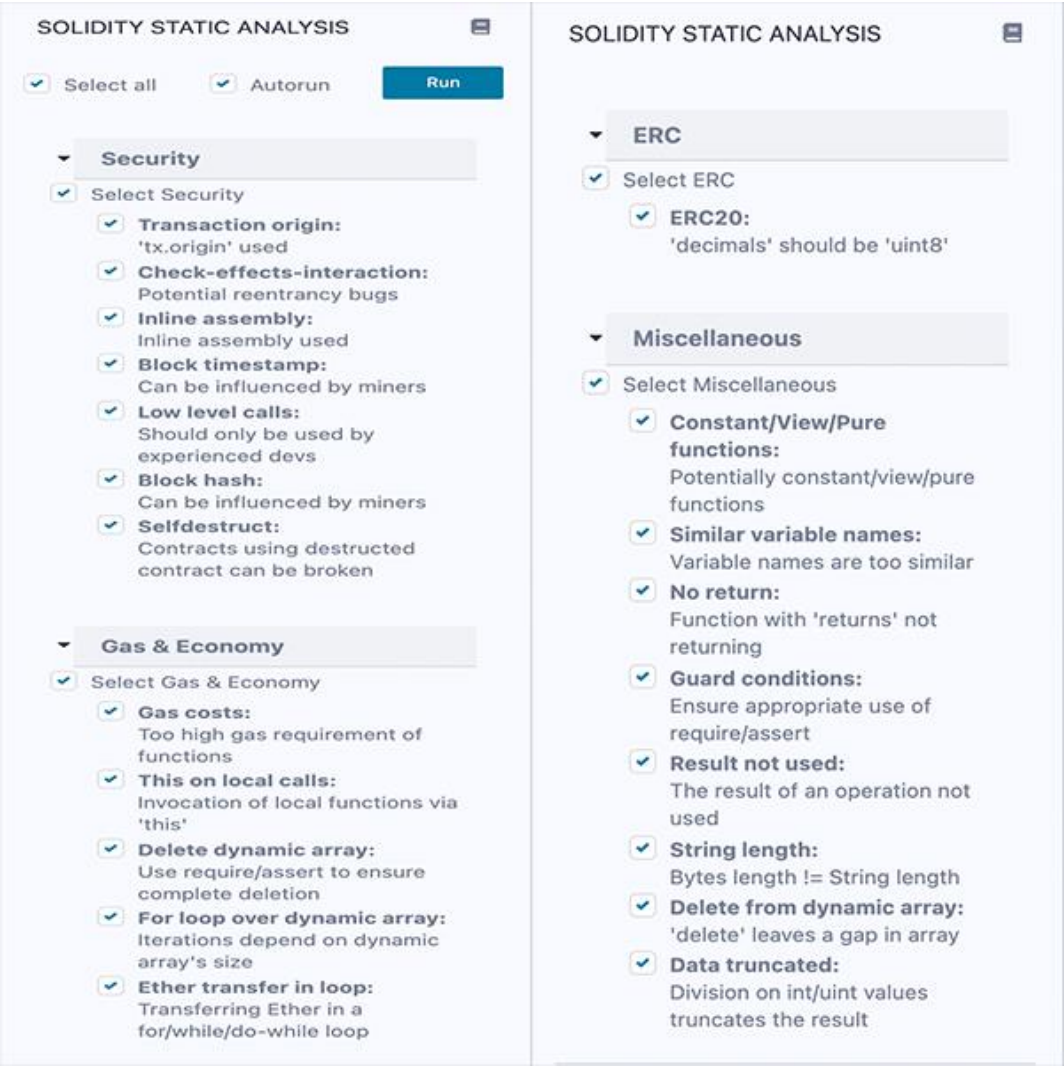
Description
Using an outdated compiler version can be problematic especially if there are publicly disclosed bugs and issues that affect the current compiler version.

Remediation
Use the latest version of the complier 0.8.29.

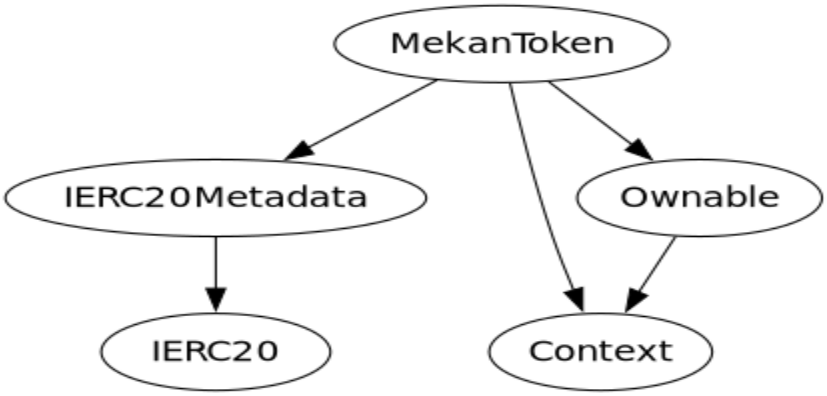
Status: Acknowledged.

Automatic Testing

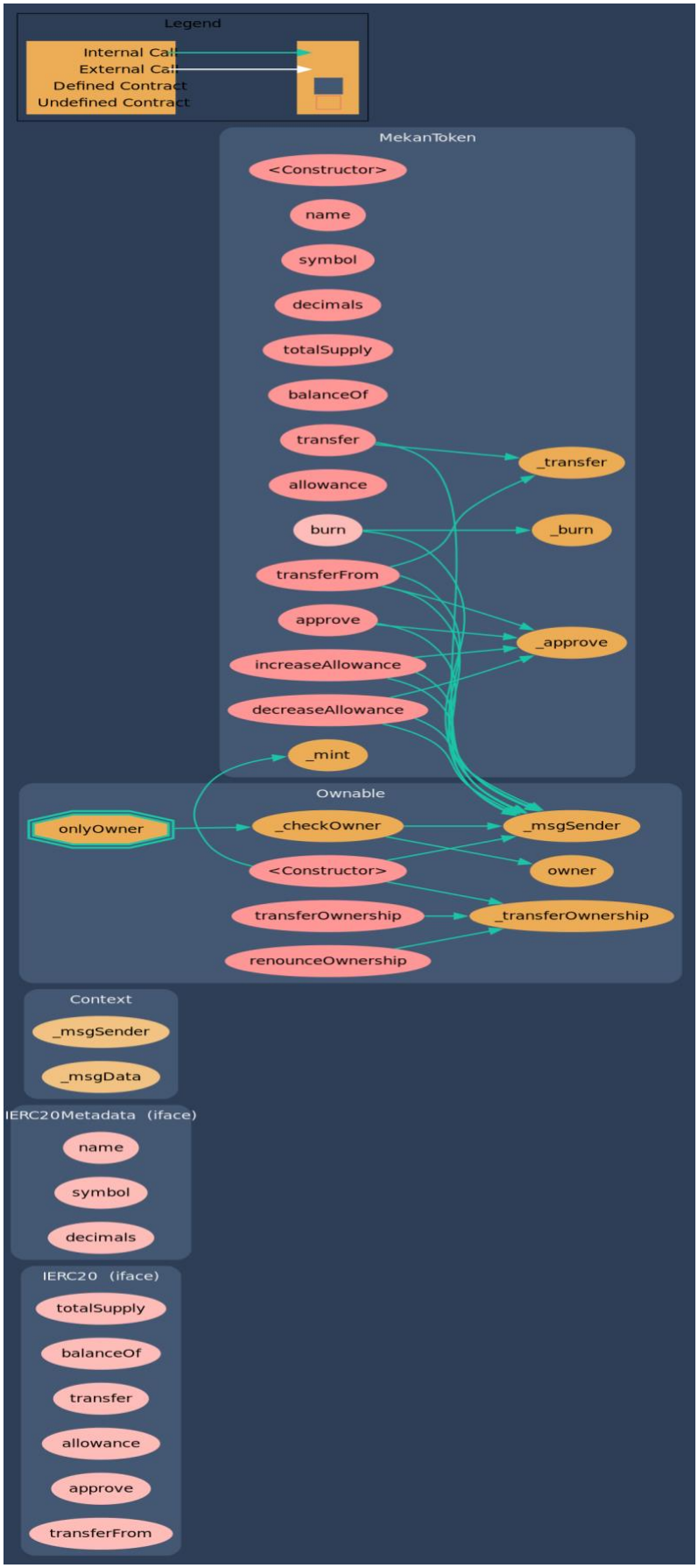
1- SOLIDITY STATIC ANALYSIS



2- Inheritance graph

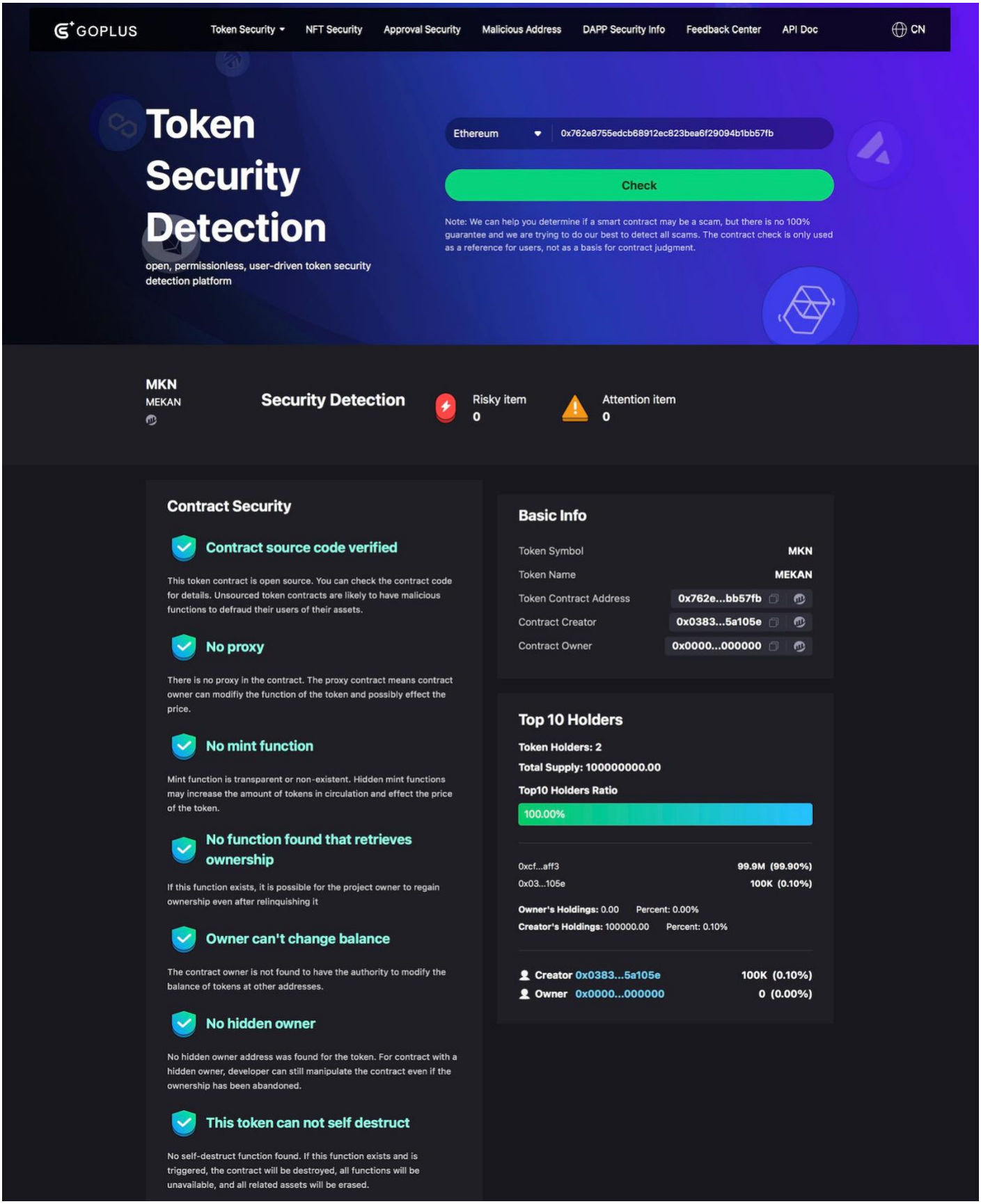


3- Call graph


Legend
Internal Call
External Call
Defined Contract
Undefined Contract
MekanToken
<Constructor>
name
symbol
decimals
totalSupply
balanceOf
transfer
allowance
burn
transferFrom
approve
increaseAllowance
decreaseAllowance
_mint
_transfer
_burn
_approve
Ownable
onlyOwner
_checkOwner
_msgSender
owner
<Constructor>
transferOwnership
_transferOwnership
renounceOwnership
Context
_msgSender
_msgData
IERC20Metadata (iface)
name
symbol
decimals
IERC20 (iface)
totalSupply
balanceOf
transfer
allowance
approve
transferFrom

GoPlus Security Report

You can see the live report here: https://gopluslabs.io/token-security/1/0x762e8755edcb68912ec823bea6f29094b1bb57fb



This token is not a gas abuser

No gas abuse activity has been found.

Honeypot Risk

Buy Tax: 0.00% Sell Tax: 0.00%

Above 10% may be considered a high tax rate. More than 50% tax rate means may not be tradable.

This does not appear to be a honeypot.

We are not aware of any malicious code.

No codes found to suspend trading.

If a suspendable code is included, the token maybe neither be bought nor sold (honeypot risk).

Holders can sell all of the token

Holders can sell all of the token. Some token contracts will have a maximum sell ratio.

The token can be bought

Generally, these unbuyable tokens would be found in Reward Tokens. Such Tokens are issued as rewards for some on-chain applications and cannot be bought directly by users.

No trading cooldown function

The token contract has no trading cooldown function. If there is a trading cooldown function, the user will not be able to sell the token within a certain time or block after buying.

No anti_whale(Unlimited number of transactions)

There is no limit to the number of token transactions. The number of scam token transactions may be limited (honeypot risk).

Anti whale can not be modified

The maximum trading amount or maximum position can not be modified.

Tax cannot be modified

The contract owner may not contain the authority to modify the transaction tax. If the transaction tax is increased to more than 49%, the tokens will not be able to be traded (honeypot risk).

No blacklist

The blacklist function is not included. If there is a blacklist, some addresses may not be able to trade normally (honeypot risk).

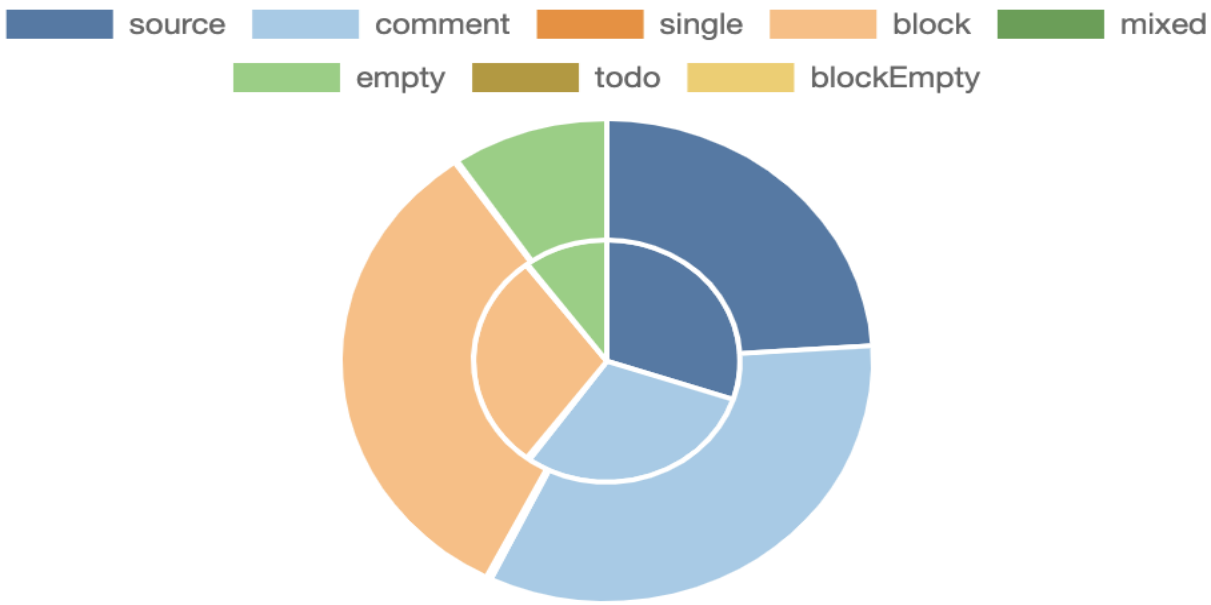
No whitelist

The whitelist function is not included. If there is a whitelist, some addresses may not be able to trade normally (honeypot risk).

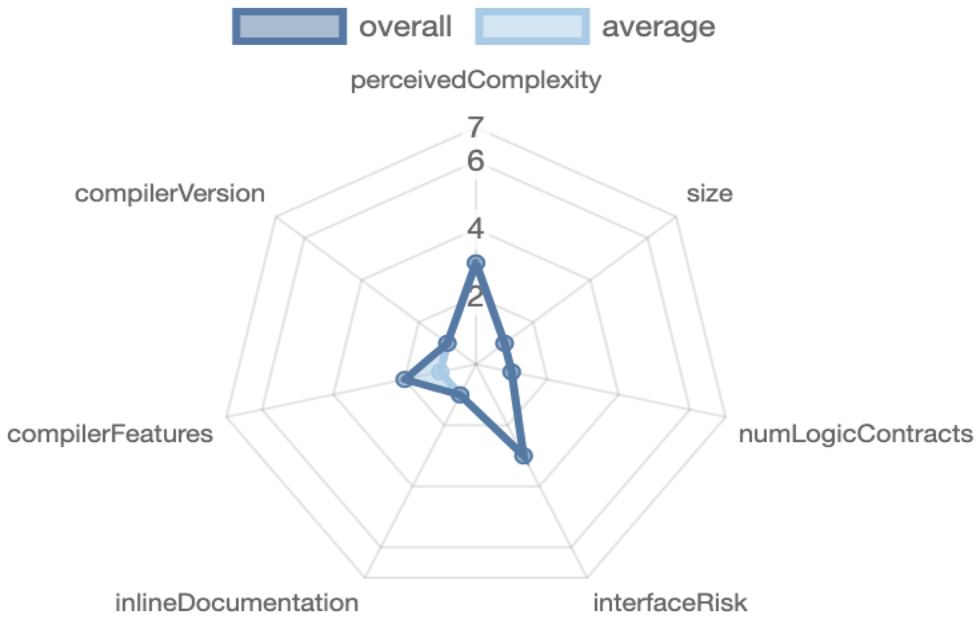
No tax changes found for personal addresses

No tax changes were found for every assigned address. If it exists, the contract owner may set a very outrageous tax rate for assigned address to block it from trading.

Source lines



Risk level



Source units in scope

Source Units in Scope

Source Units Analyzed: `1`
Source Units in Scope: `1` **(100%)**

Type	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
📝🔍🎨	MekanToken.sol	3	2	427	357	154	213	125	🔆Σ
📝🔍🎨	**Totals**	**3**	**2**	**427**	**357**	**154**	**213**	**125**	🔆Σ

Legend: [➖]

- **Lines**: total lines of the source unit
- **nLines**: normalized lines of the source unit (e.g. normalizes functions spanning multiple lines)
- **nSLOC**: normalized source lines of code (only source-code lines; no comments, no blank lines)
- **Comment Lines**: lines containing single or block comments
- **Complexity Score**: a custom complexity score derived from code statements that are known to introduce code complexity (branches, loops, calls, external interfaces, ...)

Capabilities

Components

📝Contracts	📚Libraries	🔍Interfaces	🎨Abstract
1	0	2	2

Exposed Functions

This section lists functions that are explicitly declared public or payable. Please note that getter methods for public stateVars are not included.

🌐Public	💰Payable
24	0

External	Internal	Private	Pure	View
10	26	0	0	16

StateVariables

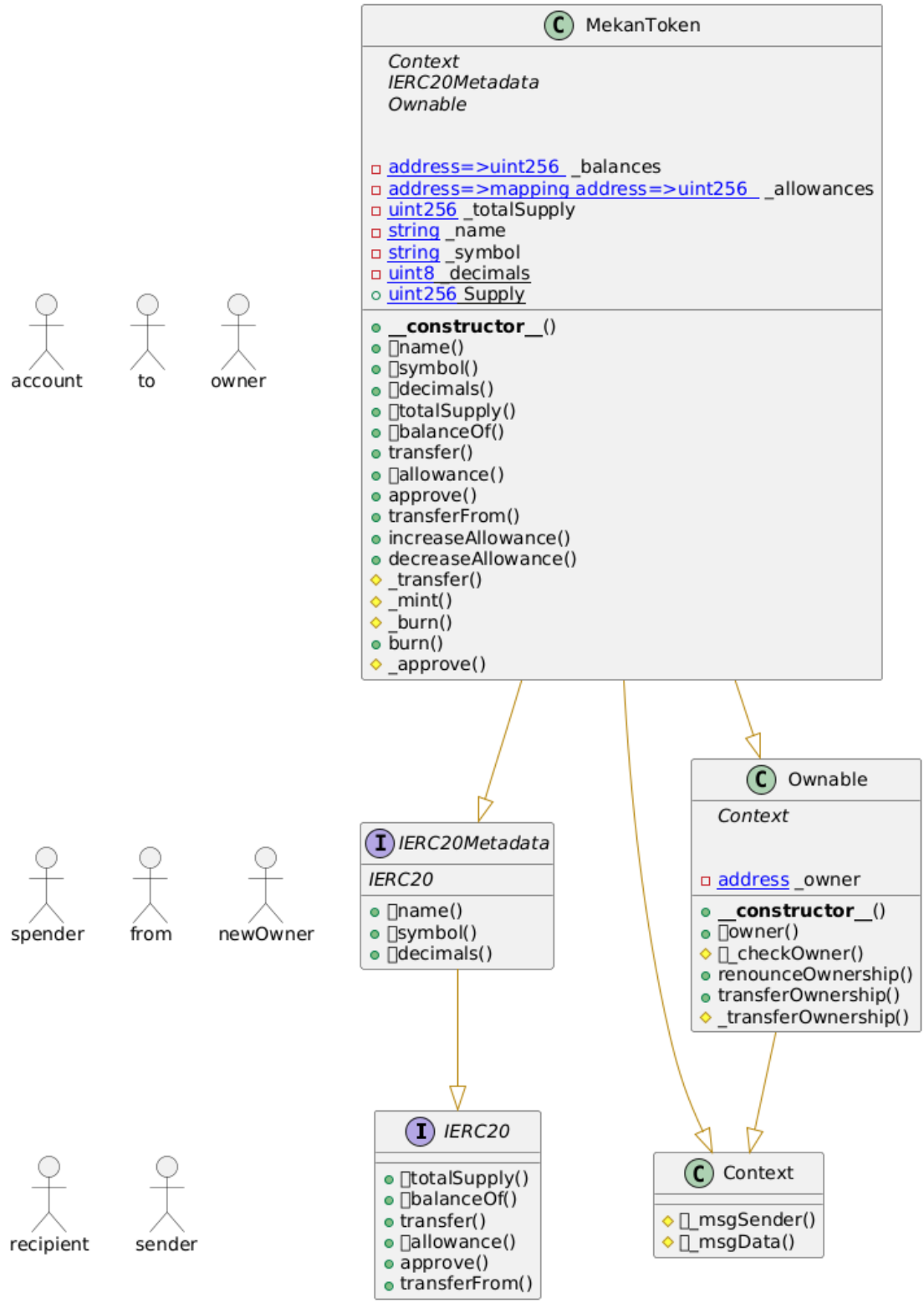
Total	🌐Public
8	1

Capabilities

Solidity Versions observed	🧪 Experimental Features	💰 Can Receive Funds	🖥️ Uses Assembly	💣 Has Destroyable Contracts
`0.8.9`		—	—	—

📩 Transfers ETH	⚡ Low-Level Calls	👥 DelegateCall	🧮 Uses Hash Functions	🧬 ECRecover	🌀 New/Create/Create2
—	—	—	—	—	—

Unified Modeling Language (UML)



Functions signature

Function Name	Sighash	Function Signature
totalSupply	18160ddd	totalSupply()
balanceOf	70a08231	balanceOf(address)
transfer	a9059cbb	transfer(address,uint256)
allowance	dd62ed3e	allowance(address,address)
approve	095ea7b3	approve(address,uint256)
transferFrom	23b872dd	transferFrom(address,address,uint256)
name	06fdde03	name()
symbol	95d89b41	symbol()
decimals	313ce567	decimals()
owner	8da5cb5b	owner()
renounceOwnership	715018a6	renounceOwnership()
transferOwnership	f2fde38b	transferOwnership(address)
name	06fdde03	name()
symbol	95d89b41	symbol()
decimals	313ce567	decimals()
totalSupply	18160ddd	totalSupply()
balanceOf	70a08231	balanceOf(address)
transfer	a9059cbb	transfer(address,uint256)
allowance	dd62ed3e	allowance(address,address)
approve	095ea7b3	approve(address,uint256)
transferFrom	23b872dd	transferFrom(address,address,uint256)
increaseAllowance	39509351	increaseAllowance(address,uint256)
decreaseAllowance	a457c2d7	decreaseAllowance(address,uint256)
burn	42966c68	burn(uint256)

Automatic general report

```
Files Description Table

|  File Name  |  SHA-1 Hash  |
|-------------|--------------|
| /Users/macbook/Desktop/smart contracts/MekanToken.sol |
ecb968e4e63628c119bc03b9c65429fd7cf78a13 |

 Contracts Description Table

|  Contract  |         Type        |       Bases      |
|                  |
|:----------:|:-------------------:|:----------------:|:----------------
:|:---------------:|
|     └      |  **Function Name**  |  **Visibility**  |  **Mutability**
|  **Modifiers**  |
||||||
| **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❗ |
||||||
| **Context** | Implementation |  |||
| └ | _msgSender | Internal 🔒 |   | |
| └ | _msgData | Internal 🔒 |   | |
||||||
| **Ownable** | Implementation | Context |||
| └ | <Constructor> | Public ❗ | 🛑  |NO❗ |
| └ | owner | Public ❗ |   |NO❗ |
| └ | _checkOwner | Internal 🔒 |   | |
| └ | renounceOwnership | Public ❗ | 🛑  | onlyOwner |
| └ | transferOwnership | Public ❗ | 🛑  | onlyOwner |
| └ | _transferOwnership | Internal 🔒 | 🛑  | |
||||||
| **MekanToken** | Implementation | Context, IERC20Metadata, Ownable |||
| └ | <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 🔒	🛑		
└	burn	External ❗	🛑	NO❗	
└	_approve	Internal 🔒	🛑		

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 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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