AuditAce
FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

MONEY

DATED : 20 June 23'

FUNCTIONAL TESTING

Centralization – Trades must be enabled

Severity: **High**

function: EnableTrading

Status: Resolved (owned by safu dev)

Overview:

The smart contract owner must enable trades for holders. If trading remain disabled, no one would be able to buy/sell/transfer tokens.

```
function EnableTrading() external onlyOwner {
    require(!tradingEnabled, "Cannot re-enable trading");
    tradingEnabled = true;
}
```

Suggestion

To mitigate this centralization issue, we propose the following options:

1. Renounce Ownership: Consider relinquishing control of the smart contract by renouncing ownership. This would remove the ability for a single entity to manipulate the router, reducing centralization risks.

2. Multi-signature Wallet: Transfer ownership to a multi-signature wallet. This would require multiple approvals for any changes to the mainRouter, adding an additional layer of security and reducing the centralization risk.

3. Transfer ownership to a trusted and valid 3rd party in order to guarantee enabling of the trades

AUDIT SUMMARY

Project name – MONEY

Date: 20 June, 2023

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

Audit Status: Passed

Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	0	0	0	0	0
Acknowledged	0	0	0	0	0
Resolved	0	1	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 conducted on the BSC Test network, and each test has a corresponding transaction attached to it. These tests can be found in the "Functional Tests" section of the report.

3- Slither :
The code has undergone static analysis using Slither.

Testnet version:
The tests were performed using the contract deployed on the BSC Testnet, which can be found at the following address:
https://testnet.bscscan.com/token/0xb3CecC7030E98DD1e46b95F90Fc95b5f172a4a3b

Token Information

Token Name : MONEY

Token Symbol: $MONEY

Decimals: 18

Token Supply: 69,000,000

Token Address:
0x6203Ac5627BbC7F66C8c1957C6F83e417bFd6c17

Checksum:
17f7deaa6ca72c461a3c4445ab1653259608ff4a

Owner:
0xF6200c127b7D9B1FDb2F45C2F5E8e12AA4A2Cb50
(at time of writing the audit)

Deployer:
0xF6200c127b7D9B1FDb2F45C2F5E8e12AA4A2Cb50

TOKEN OVERVIEW

Fees:

Buy Fees: 0%

Sell Fees: 0%

Transfer Fees: 0%

Fees Privilege: No fees

Ownership: Not owned

Minting: none

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Privileges:- Initial distribution of the tokens

- enabling trades

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 isexercised 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

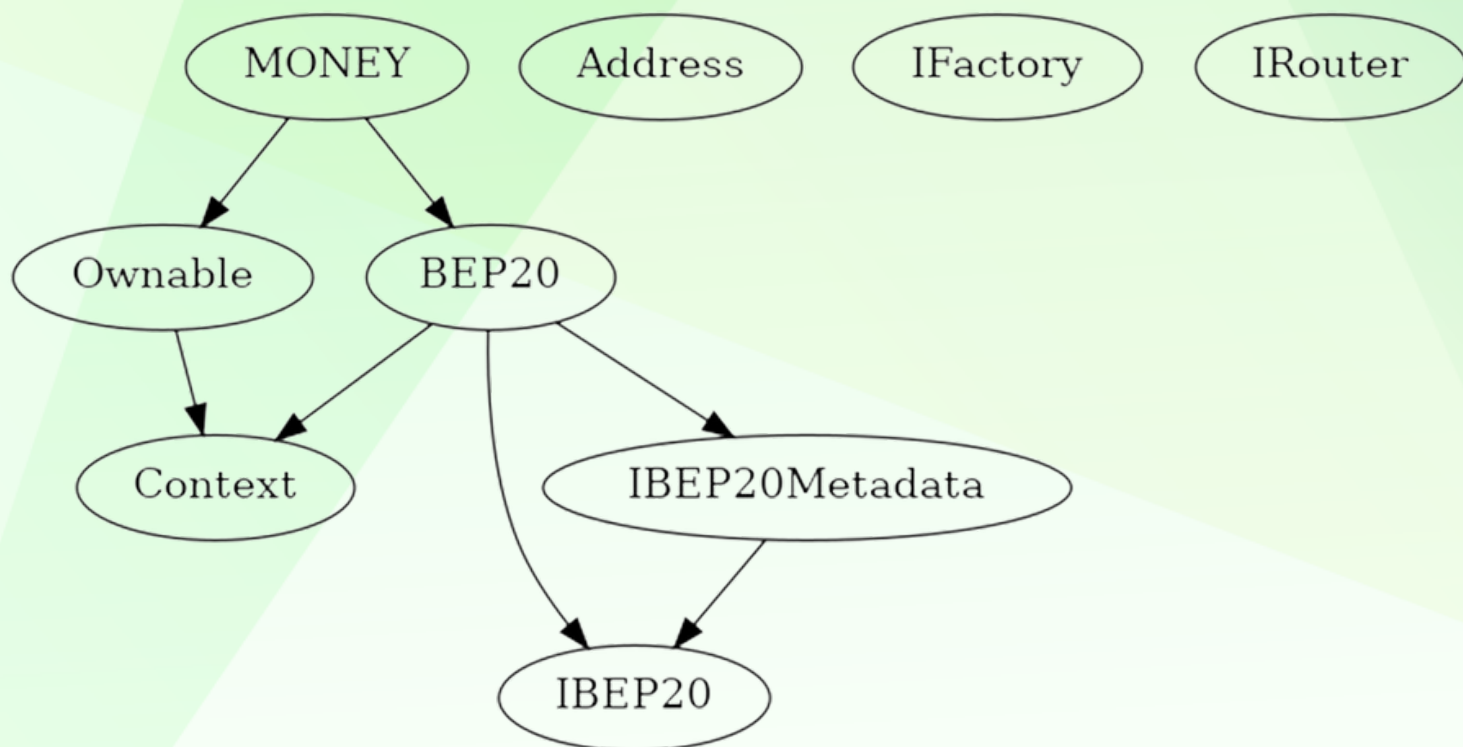| Severity	Found
◆ Critical	0
◆ High-Risk	1
◆ Medium-Risk	0
◆ Low-Risk	0
◆ Gas Optimization / Suggestions	0

INHERITANCE TREE

POINTS TO NOTE

- owner is not able to set buy/sell/transfer fees (0% tax)
- owner is not able to set max buy/sell/transfer/wallet limits
- owner is not able to blacklist an arbitrary wallet
- owner is not able to mint new tokens
- owner is not able to disable trades
- **owner must enable trades manually for investors**

CONTRACT ASSESMENT

Contract	Type	Bases		
└	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
Context	Implementation			
└	_msgSender	Internal 🔒		
└	_msgData	Internal 🔒		
IBEP20	Interface			
└	totalSupply	External ❗		NO ❗
└	balanceOf	External ❗		NO ❗
└	transfer	External ❗	⬤	NO ❗
└	allowance	External ❗		NO ❗
└	approve	External ❗	⬤	NO ❗
└	transferFrom	External ❗	⬤	NO ❗
IBEP20Metadata	Interface	IBEP20		
└	name	External ❗		NO ❗
└	symbol	External ❗		NO ❗
└	decimals	External ❗		NO ❗
BEP20	Implementation	Context, IBEP20, IBEP20Metadata		
└	<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 🔒	⬤	
└	_tokengeneration	Internal 🔒	⬤	
└	_approve	Internal 🔒	⬤	
Address	Library			
└	sendValue	Internal 🔒	⬤	
Ownable	Implementation	Context		
└	<Constructor>	Public ❗	⬤	NO ❗

CONTRACT ASSESMENT

└	owner	Public ❗		NO ❗
└	renounceOwnership	Public ❗	⬛	onlyOwner
└	transferOwnership	Public ❗	⬛	onlyOwner
└	_setOwner	Private 🔐	⬛	
IFactory	Interface			
└	createPair	External ❗	⬛	NO ❗
IRouter	Interface			
└	factory	External ❗		NO ❗
└	WETH	External ❗		NO ❗
MONEY	Implementation	BEP20, Ownable		
└	<Constructor>	Public ❗	⬛	BEP20
└	approve	Public ❗	⬛	NO ❗
└	transferFrom	Public ❗	⬛	NO ❗
└	increaseAllowance	Public ❗	⬛	NO ❗
└	decreaseAllowance	Public ❗	⬛	NO ❗
└	transfer	Public ❗	⬛	NO ❗
└	_transfer	Internal 🔒	⬛	
└	EnableTrading	External ❗	⬛	onlyOwner
└	updateWhitelist	External ❗	⬛	onlyOwner
└	bulkWhitelist	External ❗	⬛	onlyOwner
└	rescueETH	External ❗	⬛	onlyOwner
└	rescueERC20	External ❗	⬛	onlyOwner
└	burnERC20	External ❗	⬛	onlyOwner
└	<Receive Ether>	External ❗	🆂🅿	NO ❗

Legend

Symbol	Meaning
⬛	Function can modify state
🆂🅿	Function is payable

STATIC ANALYSIS

```
Address.sendValue(address,uint256) (contracts/Token.sol#290-295) is never used and should be removed
Context._msgData() (contracts/Token.sol#24-27) 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#17) necessitates a version too recent to be trusted. Consider deploying with 0.6.12/0.7.6/0.8.16
solc-0.8.20 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#290-295):
        - (success) = recipient.call{value: amount}() (contracts/Token.sol#293)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls

Variable BEP20._balances (contracts/Token.sol#66) is not in mixedCase
Variable BEP20._allowances (contracts/Token.sol#68) is not in mixedCase
Function IRouter.WETH() (contracts/Token.sol#338) is not in mixedCase
Function MONEY.EnableTrading() (contracts/Token.sol#412-415) is not in mixedCase
Parameter MONEY.updateWhitelist(address,bool)._address (contracts/Token.sol#417) is not in mixedCase
Constant MONEY.deadWallet (contracts/Token.sol#349) is not in UPPER_CASE_WITH_UNDERSCORES
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

Redundant expression "this (contracts/Token.sol#25)" inContext (contracts/Token.sol#19-28)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements

MONEY.pair (contracts/Token.sol#345) should be immutable
MONEY.router (contracts/Token.sol#344) 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

1- Adding liquidity (passed):

https://testnet.bscscan.com/tx/0x1b3cb0da28521fde903fc97f47e4c64
7ac1f3e4445bdc24dd9595fd13031fcbf

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

https://testnet.bscscan.com/tx/0xe097f94c8c0d1605b87c5d0d4b5df4
f020befc49717c7de8678c5cf9bd2e5930

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

https://testnet.bscscan.com/tx/0xd8800a5e770e252fbef60ef12a23204
17013ad888044963a5143d241b7c425fc

4- Transferring (0% tax) (passed):

https://testnet.bscscan.com/tx/0x4fee1f80be68a5a41c562281c0b6e2f
a4762f6dba21f1f37eaa90a3b3eb5026a

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