



# CONTRACT WOLF

**Blockchain Security - Smart Contract Audits**

## Security Assessment

April 13, 2022



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# Disclaimer

**ContractWolf.io** audits and reports should not be considered as a form of project's "advertisement" and does not cover any interaction and assessment from "project's contract" to "external contracts" such as Pancakeswap or similar.

**ContractWolf** does not provide any warranty on its released reports.

**ContractWolf** should not be used as a decision to invest into an audited project and is not affiliated nor partners to its audited contract projects.

**ContractWolf** provides transparent report to all its "clients" and to its "clients participants" and will not claim any guarantee of bug-free code within it's **SMART CONTRACT**.

**ContractWolf** presence is to analyze, audit and assess the client's smart contract's code.

Each company or projects should be liable to its security flaws and functionalities.

## Scope of Work

**LocoMeta** team agreed and provided us with the files that needs to be tested (Github, Bscscan, Etherscan, files, etc.). The scope of the audit is the main contract.

The goal of this engagement was to identify if there is a possibility of security flaws in the implementation of the contract or system.

**ContractWolf** will be focusing on contract issues and functionalities along with the projects claims from smart contract to their website, whitepaper and repository which has been provided by **LocoMeta**.

# Network

Binance Smart Chain (BEP20)

## Contract link

<https://bscscan.com/address/0x97A62Fd3d3f580f89d6617884D6c6C5051e1c5F0>

## Website

<https://locometa.io>

## Telegram

<https://t.me/LocoMetaGlobal>

## Twitter

<https://twitter.com/LocometaGlobal>

## Medium

<https://medium.com/@Locometa>

## Description

LocoMeta is a blockchain-based business Metaverse game centered around NFTs, Staking, and Farming.

It is a mint to earn game designed to provide users with a fun experience by purchasing various NFTs to earn LOCO tokens in the LocoMeta Universe. Although in the beta version of the metaverse universe, these NFTs are earning models, they will provide priority to create the first in-game avatar and participate.

LocoMeta aims to be the best creative Metaverse game on the blockchain, while allowing its users to enjoy being part of a limitless universe, the excitement of strategic gameplay and earning LOCO token.

## Logo



# Risk Level Classification

Risk Level represents the classification or the probability that a certain function or threat that can exploit vulnerability and have an impact within the system or contract.

Risk Level is computed based on CVSS Version 3.0

Level	Value	Vulnerability
Critical	9 - 10	An Exposure that can affect the contract functions in several events that can risk and disrupt the contract
High	7 - 8.9	An Exposure that can affect the outcome when using the contract that can serve as an opening in manipulating the contract in an unwanted manner
Medium	4 - 6.9	An opening that could affect the outcome in executing the contract in a specific situation
Low	0.1 - 3.9	An opening but doesn't have an impact on the functionality of the contract
Informational	0	An opening that consists of information's but will not risk or affect the contract

# Auditing Approach

Every line of code along with its functionalities will undergo manual review to check its security issues, quality, and contract scope of inheritance. The manual review will be done by our team that will document any issues that there were discovered.

## Methodology

The auditing process follows a routine series of steps:

1. Code review that includes the following:

- Review of the specifications, sources, and instructions provided to ContractWolf to make sure we understand the size, scope, and functionality of the smart contract.
- Manual review of code, our team will have a process of reading the code line-by-line with the intention of identifying potential vulnerabilities and security flaws.

2. Testing and automated analysis that includes:

- Testing the smart contract functions with common test cases and scenarios, to ensure that it returns the expected results.

3. Best practices review, the team will review the contract with the aim to improve efficiency, effectiveness, clarifications, maintainability, security, and control within the smart contract.

4. Recommendations to help the project take steps to secure the smart contract.

# Used Code from other Frameworks/Smart Contracts (Direct Imports)

## Imported Packages

- Context
- ERC20
- IERC20
- IERC20Metadata
- IPancakeRouter
- LocoMeta
- Ownable
- SafeMath



# Description

Optimization enabled: Yes

Decimal: 18

Symbol: LOCO

Max / Total supply: 150,000,000

## Capabilities

### Components

Version	Contracts	Libraries	Interfaces	Abstract
1.0	2	1	3	2

### Exposed Functions

Version	Public	Private	External	Internal
1.0	39	0	14	33

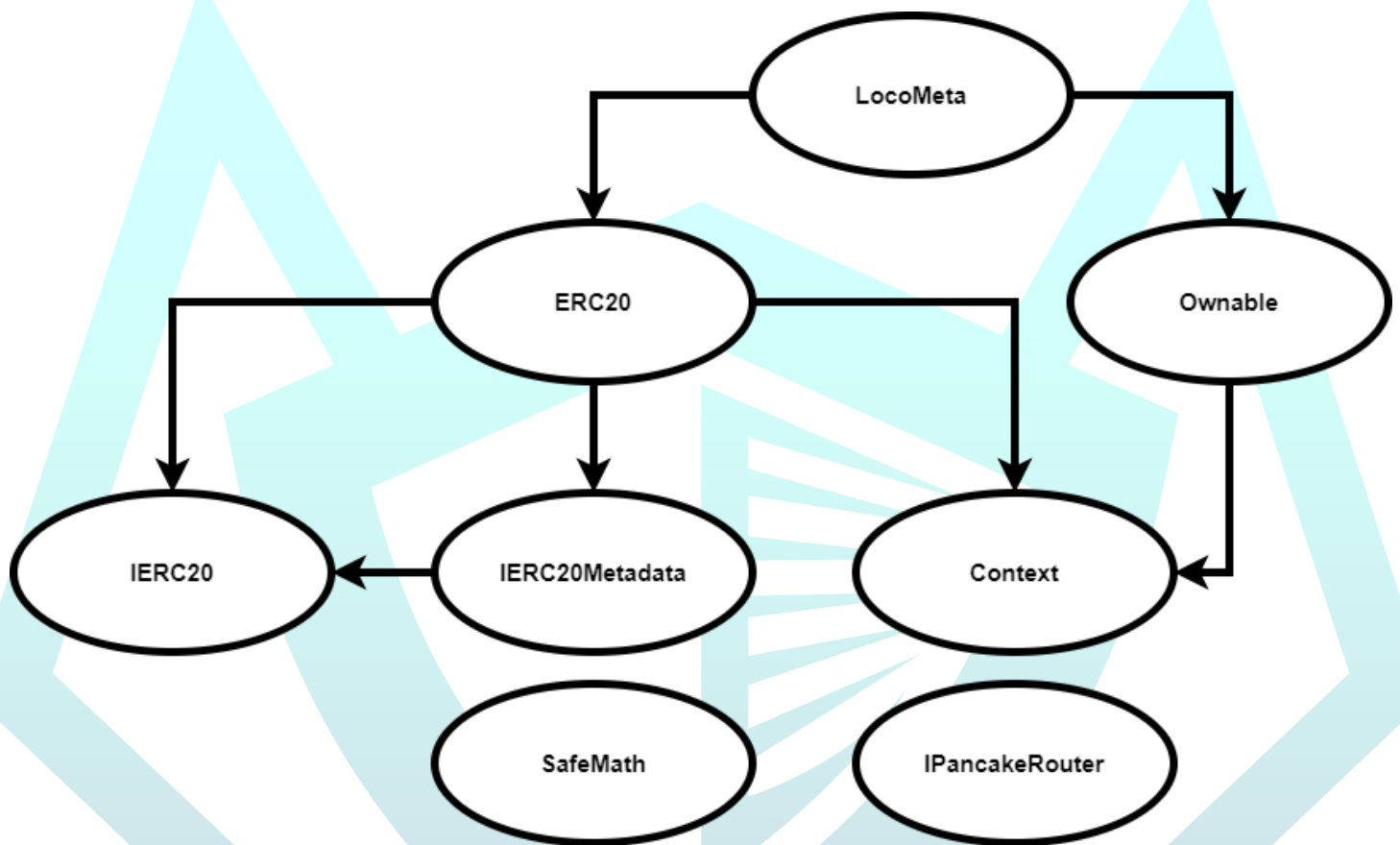
### State Variables

Version	Total	Public
1.0	9	1

### Capabilities

Version	Solidity Versions Observed	Experimental Features	Can Receive Funds	Uses Assembly	Has Destroyable Contracts
1.0	v0.8.7		Yes	No	No

# Inheritance Graph



## Correct implementation of Token Standard

Tested	Verified
✓	✗

## Overall Checkup (Smart Contract Security)

Tested	Verified
✓	✓

Function	Description	Exist	Tested	Verified
TotalSupply	Information about the total coin or token supply	✓	✓	✓
BalanceOf	Details on the account balance from a specified address	✓	✓	✓
Transfer	An action that transfers a specified amount of coin or token to a specified address	✓	✓	✓
TransferFrom	An action that transfers a specified amount of coin or token from a specified address	✓	✓	✓
Approve	Provides permission to withdraw specified number of coin or token from a specified address	✓	✓	✓

# Verify Claims

Statement	Exist	Tested	Deployer
Renounce Ownership	✓	✓	✓
Mint	✓	✓	✗
Burn	✓	✓	✗
Block	—	—	—
Pause	—	—	—

## Legend

Attribute	Symbol
Verified / Can	✓
Verified / Cannot	✗
Unverified / Not checked	🚩
Not Available	—

# Write Functions of Contract

1. addAddressToExcludedForLiquidity

2. addAddressToExcludedForMarketing

3. approve

4. decreaseAllowance

5. increaseAllowance

6. removeAddressFromExcludedForLiquidity

7. removeAddressFromExcludedForMarketing

8. renounceOwnership

9. setLiquidityOpenForEveryTransaction

10. setLiquidityOpenForPairTransaction

11. setMarketingOpenForEveryTransaction

12. setMarketingOpenForPairTransaction

13. setLiquidityPercentage

14. setMarketingAddress

15. setMarketingPercentage

16. setMaxLiquidityAmount

17. setMaxMarketingAmount

18. setMinLiquidityAmount

19. setMinMarketingAmount

20. setPairAddress

21. transfer

22. transferFrom

23. transferOwnership

24. withdrawBNB

25. withdrawLoco

26. withdrawWBNB

# AUDIT PASSED

## Low Issues

A floating pragma is set (SWC – 103)	L: 3	LocoMeta.sol
A floating pragma is set (SWC – 103)	L: 4	Context.sol
A floating pragma is set (SWC – 103)	L: 4	ERC20.sol
A floating pragma is set (SWC – 103)	L: 4	IERC20.sol
A floating pragma is set (SWC – 103)	L: 4	IERC20Metadata.sol
A floating pragma is set (SWC – 103)	L: 4	Ownable.sol
A floating pragma is set (SWC – 103)	L: 3	PancakeRouter.sol
A floating pragma is set (SWC – 103)	L: 4	SafeMath.sol

# Audit Comments

- Deployer can renounce ownership
- Deployer can transfer ownership
- Deployer can include/exclude address for liquidity
- Deployer can include/exclude address for marketing
- Deployer can set marketing address
- Deployer can set amount in liquidity with an indefinite amount
- Deployer can set amount in marketing with an indefinite amount
- Deployer can set percentage in liquidity with an indefinite amount
- Deployer can set percentage in marketing with an indefinite amount
- Deployer can withdraw BNB from contract
- Deployer can withdraw tokens from contract
- Deployer cannot block user
- Deployer cannot mint after initial deployment
- Deployer cannot burn token
- Deployer cannot pause contract



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