Assure DeFi™

The Verification **Gold Standard ™**

Security Assessment

ManaCoin Token

September 19, 2023

Audit Status: Fail

Audit Edition: Advance Custom

ASSURE DEFI™

THE VERIFICATION GOLD STANDARD

Risk Analysis

Classifications of Manual Risk Results

Classification	Description
Critical	Danger or Potential Problems.
High	Be Careful or Fail test.
Low	Pass, Not-Detected or Safe Item.
Informational	Function Detected

Manual Code Review Risk Results

Contract Privilege	Description
Buy Tax	15%
Sale Tax	20%
Cannot Sale	Pass
Cannot Sale	Pass
Max Tax	20%
Modify Tax	Yes
Fee Check	Pass
Is Honeypot?	Not Detected
Trading Cooldown	Not Detected
Can Pause Trade?	Detected, owner need to enable trade.
Pause Transfer?	Detected, owner need to enable trade.
Max Tx?	Fail
Is Anti Whale?	Detected
Is Anti Bot?	Not Detected

Contract Privilege	Description
Is Blacklist?	Not Detected
Blacklist Check	Pass
is Whitelist?	Detected
Can Mint?	Pass
Is Proxy?	Not Detected
Can Take Ownership?	Not Detected
Hidden Owner?	Not Detected
Owner	0x502e1A4eCA726C185D8bdbBa120Dc8Ac189e9d01
Self Destruct?	Not Detected
External Call?	Not Detected
Other?	Detected
Holders	1
Auditor Confidence	Medium Risk

The following quick summary it's added to the project overview; however, there are more details about the audit and its results. Please read every detail.

Project Overview

Token Summary

Parameter	Result
Address	0xA1655bACd44E8dABa5c305e7B7bdECAdD432e110
Name	ManaCoin
Token Tracker	ManaCoin (MNC)
Decimals	18
Supply	100,000,000
Platform	Ethereum
compiler	v0.8.18+commit.87f61d96
Contract Name	ManaCoin
Optimization	Yes with 200 runs
LicenseType	MIT
Language	Solidity
Codebase	https://etherscan.io/address/0xA1655bACd44E8dABa5c305e7B7bdECAdD432e110#code
Payment Tx	Corporate

Project Overview

Simulation Summary

Parameter	Result
Transfer From Owner	Pass
Transfer From Holder	Pass
Add Liquidity	Pass
RemoveLiquidity	Pass
Buy from Owner	Pass
Buy from Holder	Pass
Sale from Owner	Pass
Sale from Holder	Pass
Remove Liquidity	Pass
SwapAndLiquify	Pass
SwapAndSale w/Fee	Pass
SwapAndSale TX	https://testnet.bscscan.com/tx/0x5e296a802ef045e0e441214eebcc99b40ddc4d735ba354ea02bc1025372d3324
SwapAndSaleNoFee	Pass
SwapAndSale No/Fee TX	https://testnet.bscscan.com/tx/0x09a54a3f0bd0b6ae33e94774251769a487d3b627f312655a1824c67b932ad806
ExcludeFromFees	Pass
LaunchPad	N/A
Pool Creation	N/A

Parameter	Result
Pool Creation TX	
Pool Finalize	N/A
Pool Finalize TX	
Enable	Pass

The following quick summary it's added to the project overview; however, there are more details about the audit and its results. Please read every detail.

Main Contract Assessed Contract Name

Name	Contract	Live
ManaCoin	0xA1655bACd44E8dABa5c305e7B7bdECAdD432e110	Yes

TestNet Contract Assessed Contract Name

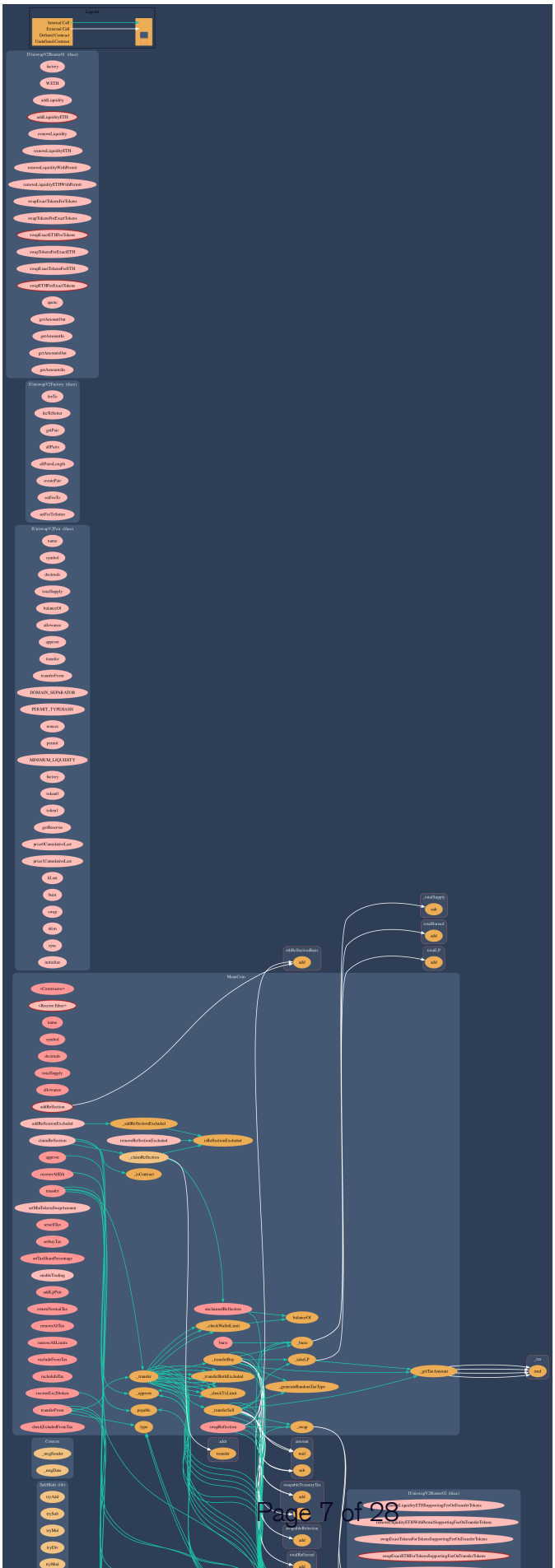
Name	Contract	Live
ManaCoin	00xd8383c3508f79812636222603758Fe99b8aeDf14	Yes

Solidity Code Provided

SolID	File Sha-1	FileName
MNC	84b61d0691d1bde525d493f7e6b2a14f1d4351b5	manacoin.sol
MNC		
MNC		
MNC		

Call Graph

The contract for ManaCoin has the following call graph structure.



Smart Contract Vulnerability Checks

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) while overlaying a wide range of weakness variants that are specific to smart contracts.

ID	Severity	Name	File	location
SWC-100	Pass	Function Default Visibility	manacoin.sol	L: 0 C: 0
SWC-101	Pass	Integer Overflow and Underflow.	manacoin.sol	L: 0 C: 0
SWC-102	Pass	Outdated Compiler Version file.	manacoin.sol	L: 0 C: 0
SWC-103	Fail	A floating pragma is set.	manacoin.sol	L: 14 C: 0
SWC-104	Pass	Unchecked Call Return Value.	manacoin.sol	L: 0 C: 0
SWC-105	Pass	Unprotected Ether Withdrawal.	manacoin.sol	L: 0 C: 0
SWC-106	Pass	Unprotected SELFDESTRUCT Instruction	manacoin.sol	L: 0 C: 0
SWC-107	Pass	Read of persistent state following external call.	manacoin.sol	L: 0 C: 0
SWC-108	Pass	State variable visibility is not set..	manacoin.sol	L: 0 C: 0
SWC-109	Pass	Uninitialized Storage Pointer.	manacoin.sol	L: 0 C: 0
SWC-110	Pass	Assert Violation.	manacoin.sol	L: 0 C: 0
SWC-111	Pass	Use of Deprecated Solidity Functions.	manacoin.sol	L: 0 C: 0
SWC-112	Pass	Delegate Call to Untrusted Callee.	manacoin.sol	L: 0 C: 0
SWC-113	Pass	Multiple calls are executed in the same transaction.	manacoin.sol	L: 0 C: 0

ID	Severity	Name	File	location
SWC-114	Pass	Transaction Order Dependence.	manacoin.sol	L: 0 C: 0
SWC-115	Low	Authorization through tx.origin.	manacoin.sol	L: 770 C: 102
SWC-116	Pass	A control flow decision is made based on The block.timestamp environment variable.	manacoin.sol	L: 0 C: 0
SWC-117	Pass	Signature Malleability.	manacoin.sol	L: 0 C: 0
SWC-118	Pass	Incorrect Constructor Name.	manacoin.sol	L: 0 C: 0
SWC-119	Pass	Shadowing State Variables.	manacoin.sol	L: 0 C: 0
SWC-120	Low	Potential use of block.number as source of randonmness.	manacoin.sol	L: 770 C: 113
SWC-121	Pass	Missing Protection against Signature Replay Attacks.	manacoin.sol	L: 0 C: 0
SWC-122	Pass	Lack of Proper Signature Verification.	manacoin.sol	L: 0 C: 0
SWC-123	Pass	Requirement Violation.	manacoin.sol	L: 0 C: 0
SWC-124	Pass	Write to Arbitrary Storage Location.	manacoin.sol	L: 0 C: 0
SWC-125	Pass	Incorrect Inheritance Order.	manacoin.sol	L: 0 C: 0
SWC-126	Pass	Insufficient Gas Griefing.	manacoin.sol	L: 0 C: 0
SWC-127	Pass	Arbitrary Jump with Function Type Variable.	manacoin.sol	L: 0 C: 0
SWC-128	Pass	DoS With Block Gas Limit.	manacoin.sol	L: 0 C: 0
SWC-129	Pass	Typographical Error.	manacoin.sol	L: 0 C: 0
SWC-130	Pass	Right-To-Left-Override control character (U +202E).	manacoin.sol	L: 0 C: 0
SWC-131	Pass	Presence of unused variables.	manacoin.sol	L: 0 C: 0

ID	Severity	Name	File	location
SWC-132	Pass	Unexpected Ether balance.	manacoin.sol	L: 0 C: 0
SWC-133	Pass	Hash Collisions with Multiple Variable Length Arguments.	manacoin.sol	L: 0 C: 0
SWC-134	Pass	Message call with hardcoded gas amount.	manacoin.sol	L: 0 C: 0
SWC-135	Pass	Code With No Effects (Irrelevant/Dead Code).	manacoin.sol	L: 0 C: 0
SWC-136	Pass	Unencrypted Private Data On-Chain.	manacoin.sol	L: 0 C: 0

We scan the contract for additional security issues using MYTHX and industry-standard security scanning tools.

Smart Contract Vulnerability Details

SWC-103 - Floating Pragma.

CWE-664: Improper Control of a Resource Through its Lifetime.

References:

Description:

Contracts should be deployed with the same compiler version and flags that they have been tested with thoroughly. Locking the pragma helps to ensure that contracts do not accidentally get deployed using, for example, an outdated compiler version that might introduce bugs that affect the contract system negatively.

Remediation:

Lock the pragma version and also consider known bugs (https://github.com/ethereum/solidity/releases) for the compiler version that is chosen.

Pragma statements can be allowed to float when a contract is intended for consumption by other developers, as in the case with contracts in a library or EthPM package. Otherwise, the developer would need to manually update the pragma in order to compile locally.

References:

Ethereum Smart Contract Best Practices - Lock pragmas to specific compiler version.

Smart Contract Vulnerability Details

SWC-115 - Authorization through tx.origin

CWE-477: Use of Obsolete Function

Description:

tx.origin is a global variable in Solidity which returns the address of the account that sent the transaction. Using the variable for authorization could make a contract vulnerable if an authorized account calls into a malicious contract. A call could be made to the vulnerable contract that passes the authorization check since tx.origin returns the original sender of the transaction which in this case is the authorized account.

Remediation:

tx.origin should not be used for authorization. Use msg.sender instead.

References:

Solidity Documentation - tx.origin

Ethereum Smart Contract Best Practices - Avoid using tx.origin

SigmaPrime - Visibility.

Smart Contract Vulnerability Details

SWC-120 - Weak Sources of Randomness from Chain Attributes

CWE-330: Use of Insufficiently Random Values

Description:

Solidity allows for ambiguous naming of state variables when inheritance is used. Contract A with a variable x could inherit contract B that also has a state variable x defined. This would result in two separate versions of x, one of them being accessed from contract A and the other one from contract B. In more complex contract systems this condition could go unnoticed and subsequently lead to security issues.

Shadowing state variables can also occur within a single contract when there are multiple definitions on the contract and function level.

Remediation:

Using commitment scheme, e.g. RANDAO. Using external sources of randomness via oracles, e.g. Oraclize. Note that this approach requires trusting in oracle, thus it may be reasonable to use multiple oracles. Using Bitcoin block hashes, as they are more expensive to mine.

References:

How can I securely generate a random number in my smart contract?)

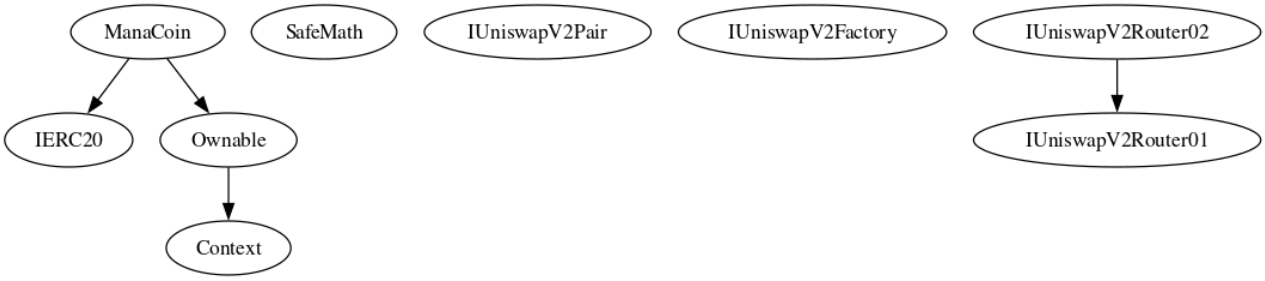
When can BLOCKHASH be safely used for a random number? When would it be unsafe?

The Run smart contract.

Inheritance

The contract for ManaCoin has the following inheritance structure.

The Project has a Total Supply of 100,000,000



Smart Contract Advance Checks

ID	Severity	Name	Result	Status
MNC-01	Low	Potential Sandwich Attacks.	Pass	Not Detected
MNC-02	Informational	Function Visibility Optimization	Fail	Detected
MNC-03	Low	Lack of Input Validation.	Fail	Detected
MNC-04	High	Centralized Risk In addLiquidity.	Pass	Not Detected
MNC-05	Low	Missing Event Emission.	Fail	Detected
MNC-06	Low	Conformance with Solidity Naming Conventions.	Pass	Not Detected
MNC-07	Low	State Variables could be Declared Constant.	Pass	Not Detected
MNC-08	Low	Dead Code Elimination.	Pass	Not Detected
MNC-09	High	Third Party Dependencies.	Pass	Not Detected
MNC-10	High	Initial Token Distribution.	Pass	Not Detected
MNC-11	Medium	'difficulty' was replaced by 'prevrandao'	Fail	Detected
MNC-12	High	Centralization Risks In The X Role	Pass	Not Detected
MNC-13	Informational	Extra Gas Cost For User..	Pass	Not Detected
MNC-14	Medium	Unnecessary Use Of SafeMath	Fail	Detected
MNC-15	Medium	Symbol Length Limitation due to Solidity Naming Standards.	Pass	Not Detected
MNC-16	Medium	Taxes can be up to 100%	Pass	Not Detected
MNC-17	Logical Issue	Conformance to numeric notation best practice.	Pass	Not Detected
MNC-18	Critical	Stop Transactions by using Enable Trade.	Fail	Detected

MNC-02 | Function Visibility Optimization.

Category	Severity	Location	Status
Gas Optimization	Informational	manacoin.sol: L: 707 C: 14,L: 712 C: 14,L: 717 C: 14,L: 726 C: 12,L: 731 C: 12,L: 737 C: 12,L: 743 C: 12	Detected

Description

The following functions are declared as public and are not invoked in any of the contracts contained within the projects scope:

Function Name	Parameters	Visibility
setTaxSharePercentage		public
addLpPair		public
removeAllTax		public
removeAllLimits		public
excludeFromTax		public
includeInTax		public
recoverErc20token		public

The functions that are never called internally within the contract should have external visibility

Remediation

We advise that the function's visibility specifiers are set to external, and the array-based arguments change their data location from memory to calldata, optimizing the gas cost of the function.

References:

external vs public best practices.

MNC-03 | Lack of Input Validation.

Category	Severity	Location	Status
Volatile Code	Low	manacoin.sol: L: 717 C: 14,L: 726 C: 12	Detected

Description

The given input is missing the check for the non-zero address.

The given input is missing the check for the .

Remediation

We advise the client to add the check for the passed-in values to prevent unexpected errors as below:

```
...
 require(receiver != address(0), "Receiver is the zero address");
...
...
require(value X limitation, "Your not able to do this function");
...
```

We also recommend customer to review the following function that is missing a required validation. .

MNC-05 | Missing Event Emission.

Category	Severity	Location	Status
Volatile Code	Low	manacoin.sol: L: 717 C: 14,L: 726 C: 12	Detected

Description

Detected missing events for critical arithmetic parameters. There are functions that have no event emitted, so it is difficult to track off-chain changes.The linked code does not create an event for the transfer.

Remediation

Emit an event for critical parameter changes. It is recommended emitting events for the sensitive functions that are controlled by centralization roles.

MNC-11 | 'difficulty' was replaced by 'prevrandao'.

Category	Severity	Location	Status
Optimization	Medium	manacoin.sol: L: 769 C: 14	Detected

Description

Since the VM version paris, 'difficulty' was replaced by 'prevrandao', which now returns a random number based on the beacon chain.solidity(8417)

Remediation

we highly recommend reviewing this configuration change to avoid potential problems.

Project Action

MNC-14 | Unnecessary Use Of SafeMath

Category	Severity	Location	Status
Logical Issue	Medium	manacoin.sol: L: 28 C: 14	Detected

Description

The SafeMath library is used unnecessarily. With Solidity compiler versions 0.8.0 or newer, arithmetic operations
will automatically revert in case of integer overflow or underflow.
library SafeMath {
An implementation of SafeMath library is found.
using SafeMath for uint256;
SafeMath library is used for uint256 type in contract.

Remediation

We advise removing the usage of SafeMath library and using the built-in arithmetic operations provided by the
Solidity programming language

Project Action

MNC-18 | Stop Transactions by using Enable Trade.

Category	Severity	Location	Status
Logical Issue	Critical	manacoin.sol: L: 722 C: 0	Detected

Description

Enable Trade is presend on the following contract and when combined with Exclude from fees it can be considered a whitelist process, this will allow anyone to trade before others and can represent and issue for the holders.

Remediation

We recommend the project owner to carefully review this function and avoid problems when performing both actions.

Project Action

Technical Findings Summary

Classification of Risk

Severity	Description
Critical	Risks are those that impact the safe functioning of a platform and must be addressed before launch. Users should not invest in any project with outstanding critical risks.
High	Risks can include centralization issues and logical errors. Under specific circumstances, these major risks can lead to loss of funds and/or control of the project.
Medium	Risks may not pose a direct risk to users' funds, but they can affect the overall functioning of a platform
Low	Risks can be any of the above but on a smaller scale. They generally do not compromise the overall integrity of the Project, but they may be less efficient than other solutions.
Informational	Errors are often recommended to improve the code's style or certain operations to fall within industry best practices. They usually do not affect the overall functioning of the code.

Findings

Severity	Found	Pending	Resolved
Critical	2	0	0
High	0	0	0
Medium	1	0	0
Low	2	0	0
Informational	1	0	0
Total	6	0	0

Social Media Checks

Social Media	URL	Result
Twitter	https://twitter.com/ManaCoinETH	Pass
Other	https://medium.com/@ManaCoinETH	Pass
Website	https://www.manacoin.io/	Pass
Telegram	https://t.me/ManaCoinETH	Pass

We recommend to have 3 or more social media sources including a completed working websites.

Social Media Information Notes:

Auditor Notes: undefined

Project Owner Notes:

Assessment Results

Score Results

Review	Score
Overall Score	67/100
Auditor Score	60/100
Review by Section	**Score**
Manual Scan Score	18/53
SWC Scan Score	31 /37
Advance Check Score	18 /19

The Following Score System Has been Added to this page to help understand the value of the audit, the maximun score is 100, however to attain that value the project most pass and provide all the data needed for the assessment. Our Passing Score has been changed to 80 Points, if a project does not attain 80% is an automatic failure. Read our notes and final assessment below.

Audit Fail

Assessment Results

Important Notes:

- Initial Buy Tax is 15% and initial sale tax is 20%, the owner can then set then to 6% via a function or via a function called returnNormalTax that is 5%.
- There are a few items from a code perspective that need to be re-evaluated.
- The owner needs to enable trade.
- addReflection does not check that msg.value > 0.
- claimReflection uses !_isContract which does not assure that the sender is an EOA.
- recoverAllEth should use call instead of transfer for better gas performances.
- recoverAllEth and recoverErc20token functions, do not check if the amounts to withdraw and the tokens to withdraw are external to the core functionality of the token and owner can DRAIN the contract of all funds it holds.
- _getTaxAmount can be optimized by reducing the amount of outputs to 1 variable. The calculation for all spreads are redudant since they are the same and need only to be calculated once. This reduces readability and increases gas costs.
- _generateRandomTaxType is not exclusively random and will behave the exact same way for all transactions made a user in a single block. This is due to the fact that all arguments

passed to the abi.encodePacked function remain the same block. While this is NOT a vulnerability, it is a bad practice to use this function as a source of randomness.

- SafeMath is implemented even though compiler used is 0.8.18 which already check for over/underflows and reverts the transaction.

- dxRouter is not excluded from Fees, so removing liquidity incurs in fees, even while the msg.sender is the owner.

- claimableReflection mapping is not used except to self set to 0.

- claimReflection can be called by different wallets utilizing the same amount of tokens and transferring them between themselves to drain all the ETH from the contract. A simple Factory contract can be used to create multiple wallets and transfer tokens between them while self destructing to fool the _isContract check.

Auditor Score =60
Audit Fail

Appendix

Finding Categories

Centralization / Privilege

Centralization / Privilege findings refer to either feature logic or implementation of components that actagainst the nature of decentralization, such as explicit ownership or specialized access roles incombination with a mechanism to relocate funds.

Gas Optimization

Gas Optimization findings do not affect the functionality of the code but generate different, more optimalEVM opcodes resulting in a reduction on the total gas cost of a transaction.

Logical Issue

Logical Issue findings detail a fault in the logic of the linked code, such as an incorrect notion on howblock.timestamp works.

Control Flow

Control Flow findings concern the access control imposed on functions, such as owner-only functionsbeing invoke-able by anyone under certain circumstances.

Volatile Code

Volatile Code findings refer to segments of code that behave unexpectedly on certain edge cases that mayresult in a vulnerability.

Coding Style

Coding Style findings usually do not affect the generated byte-code but rather comment on how to makethe codebase more legible and, as a result, easily maintainable.

Inconsistency

Inconsistency findings refer to functions that should seemingly behave similarly yet contain different code,such as a constructor assignment imposing different require statements on the input variables than a setterfunction.

Coding Best Practices

ERC 20 Conding Standards are a set of rules that each developer should follow to ensure the code meet a set of creterias and is readable by all the developers.

Disclaimer

Assure Defi has conducted an independent security assessment to verify the integrity of and highlight any vulnerabilities or errors, intentional or unintentional, that may be present in the reviewed code for the scope of this assessment. This report does not constitute agreement, acceptance, or advocation for the Project, and users relying on this report should not consider this as having any merit for financial advice in any shape, form, or nature. The contracts audited do not account for any economic developments that the Project in question may pursue, and the veracity of the findings thus presented in this report relate solely to the proficiency, competence, aptitude, and discretion of our independent auditors, who make no guarantees nor assurance that the contracts are entirely free of exploits, bugs, vulnerabilities or deprecation of technologies.

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