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AuditAce
FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

AMONGAI

DATED : 08 January 2024

MANUAL TESTING

Centralization – Enabling Trades.
Severity: High
Function: Open_Trade
Status: Open

Overview:
The EnableTrading function permits only the contract owner to activate trading capabilities. Until this function is executed, no investors can buy, sell, or transfer their tokens. This places a high degree of control and centralization in the hands of the contract owner.

```
function Open_Trade() external onlyOwner {
      require(!Trade_Open, "OPN"); // Trade is already open - Trade cannot be paused
    feeProcessingEnabled = true
```

Suggestion:

To reduce centralization and potential manipulation, consider one of the following approaches:

1.Automatically enable trading after a specified condition, such as the completion of a presale, is met.
2.If manual activation is still desired, consider transferring the ownership of the contract to a trustworthy, third-party entity like a certified "PinkSale Safu" developer. This can give investors more confidence in the eventual activation of trading capabilities, mitigating concerns of potential bad-faith actions by the original owner.

AUDIT SUMMARY

Project name – AMONGAI

Date: 08 January, 2024

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

Audit Status: **Passed with High Risk**

Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	0	1	2	3	1
Acknowledged	0	0	0	0	0
Resolved	0	0	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/address/0xb99855985c0cf8e14c545c3c778c715d8d47ee5c#code

Token Information

Token Address:
0x9D1d562Bf89c138DfdD2D6E8C854490A983a20A9

Name: AMONGAI

Symbol: AMNG

Decimals: 18

Network: BscScan

Token Type: BEP-20

Owner:
0x60e06a65bCd2F0A16f236573A7056f6472FD2E27

Deployer:
0x60e06a65bCd2F0A16f236573A7056f6472FD2E27

Token Supply: 100000000

Checksum: f2032c616934aeb47e6039f76b20d2h5

Testnet:
https://testnet.bscscan.com/address/0xb99855985c0cf8e14c545c3c778c715d8d47ee5c#code

TOKEN OVERVIEW

Buy Fee: 0-15%

Sell Fee: 0-15%

Transfer Fee: 0-0%

Fee Privilege: Owner

Ownership: Owned

Minting: None

Max Tx: Yes

Blacklist: No

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
- Private modifier
- Multiple Sends
- Using Suicide
- Gas Limitand Loops
- Address hardcoded
- Exception Disorder
- Using inline assembly
- Divide before multiply
- Missing Zero Address Validation
- Compiler version not fixed
- **Gasless Send**
- Using block.timestamp
- Re-entrancy
- Tautology or contradiction
- Timestamp Dependence
- Revert/require functions
- Use of tx.origin
- Integer overflow/underflow
- Dangerous strict equalities
- Using SHA3
- Using throw

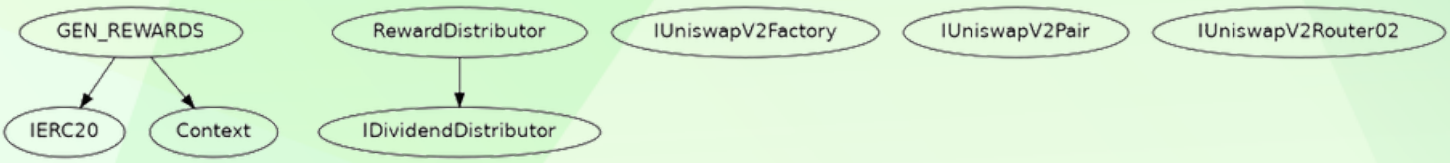
CLASSIFICATION OF RISK

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	2
Low-Risk	3
Gas Optimization / Suggestions	1

INHERITANCE TREE



POINTS TO NOTE

- The owner can transfer ownership.
- The owner can renounce ownership.
- The owner can Enable trading.
- The owner can set the fees not more than 15%.
- The owner can set wallet limits.
- The owner can rescue trapped tokens.
- The owner can update telegram group/Lp locks URL/ Website URL.
- The owner can manually swap tokens.
- The owner can include/exclude wallets from rewards.

STATIC ANALYSIS

```
INFO:Detectors:
Reentrancy in RewardDistributor.process(uint256) (GEN_REWARDS.sol#1223-1248):
        External calls:
        - distributeDividend(shareholders[currentIndex]) (GEN_REWARDS.sol#1240)
                - IERC20(RWDTKN).transfer(shareholder,amount) (GEN_REWARDS.sol#1273)
        State variables written after the call(s):
        - currentIndex = 0 (GEN_REWARDS.sol#1236)
        RewardDistributor.currentIndex (GEN_REWARDS.sol#1159) can be used in cross function reentrancies:
        - RewardDistributor.process(uint256) (GEN_REWARDS.sol#1223-1248)
        - currentIndex ++ (GEN_REWARDS.sol#1245)
        RewardDistributor.currentIndex (GEN_REWARDS.sol#1159) can be used in cross function reentrancies:
        - RewardDistributor.process(uint256) (GEN_REWARDS.sol#1223-1248)
Reentrancy in RewardDistributor.setShare(address,uint256) (GEN_REWARDS.sol#1186-1200):
        External calls:
        - distributeDividend(shareholder) (GEN_REWARDS.sol#1188)
                - IERC20(RWDTKN).transfer(shareholder,amount) (GEN_REWARDS.sol#1273)
        State variables written after the call(s):
        - shares[shareholder].amount = amount (GEN_REWARDS.sol#1198)
        RewardDistributor.shares (GEN_REWARDS.sol#1148) can be used in cross function reentrancies:
        - RewardDistributor.distributeDividend(address) (GEN_REWARDS.sol#1257-1275)
        - RewardDistributor.getUnpaidEarnings(address) (GEN_REWARDS.sol#1277-1288)
        - RewardDistributor.setShare(address,uint256) (GEN_REWARDS.sol#1186-1200)
        - RewardDistributor.shares (GEN_REWARDS.sol#1148)
        - shares[shareholder].totalExcluded = getCumulativeDividends(shares[shareholder].amount) (GEN_REWARDS.sol#1199)
        RewardDistributor.shares (GEN_REWARDS.sol#1148) can be used in cross function reentrancies:
        - RewardDistributor.distributeDividend(address) (GEN_REWARDS.sol#1257-1275)
        - RewardDistributor.getUnpaidEarnings(address) (GEN_REWARDS.sol#1277-1288)
        - RewardDistributor.setShare(address,uint256) (GEN_REWARDS.sol#1186-1200)
        - RewardDistributor.shares (GEN_REWARDS.sol#1148)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-1
INFO:Detectors:
GEN_REWARDS.addLiquidity(uint256,uint256) (GEN_REWARDS.sol#1027-1038) ignores return value by uniswapV2Router.addLiquidityETH{value: BNBAmount}(address(this
),tokenAmount,0,0,Wallet_Liquidity,block.timestamp) (GEN_REWARDS.sol#1030-1037)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-return
```

```
INFO:Detectors:
GEN_REWARDS.allowance(address,address).owner (GEN_REWARDS.sol#784) shadows:
        - GEN_REWARDS.owner() (GEN_REWARDS.sol#760-762) (function)
GEN_REWARDS._approve(address,address,uint256).owner (GEN_REWARDS.sol#806) shadows:
        - GEN_REWARDS.owner() (GEN_REWARDS.sol#760-762) (function)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#local-variable-shadowing
INFO:Detectors:
GEN_REWARDS.swapTriggerCount(uint256) (GEN_REWARDS.sol#495-498) should emit an event for:
        - swapTrigger = Transaction_Count + 1 (GEN_REWARDS.sol#497)
GEN_REWARDS.setDistributionGas(uint256) (GEN_REWARDS.sol#651-656) should emit an event for:
        - distributorGas = Gas_Amount (GEN_REWARDS.sol#654)
RewardDistributor.setDistributionCriteria(uint256,uint256) (GEN_REWARDS.sol#1180-1184) should emit an event for:
        - minPeriod = _minPeriod (GEN_REWARDS.sol#1182)
        - minDistribution = _minDistribution (GEN_REWARDS.sol#1183)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-events-arithmetic
INFO:Detectors:
GEN_REWARDS.constructor(string,string,uint256,uint256,address)._OwnerWallet (GEN_REWARDS.sol#147) lacks a zero-check on :
                - _owner = _OwnerWallet (GEN_REWARDS.sol#159)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-zero-address-validation
INFO:Detectors:
RewardDistributor.distributeDividend(address) (GEN_REWARDS.sol#1257-1275) has external calls inside a loop: IERC20(RWDTKN).transfer(shareholder,amount) (GEN
_REWARDS.sol#1273)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation/#calls-inside-a-loop
INFO:Detectors:
Reentrancy in GEN_REWARDS.Open_Trade() (GEN_REWARDS.sol#381-424):
        External calls:
        - uniswapV2Pair = IUniswapV2Factory(uniswapV2Router.factory()).createPair(address(this),uniswapV2Router.WETH()) (GEN_REWARDS.sol#405)
        State variables written after the call(s):
        - _isExcludedFromRewards[uniswapV2Pair] = true (GEN_REWARDS.sol#419)
        - _isExcludedFromRewards[address(this)] = true (GEN_REWARDS.sol#420)
        - _isExcludedFromRewards[_owner] = true (GEN_REWARDS.sol#421)
        - _isExcludedFromRewards[Wallet_Burn] = true (GEN_REWARDS.sol#422)
        - _isLimitExempt[uniswapV2Pair] = true (GEN_REWARDS.sol#417)
        - _isPair[uniswapV2Pair] = true (GEN_REWARDS.sol#416)
Reentrancy in GEN_REWARDS._transfer(address,address,uint256) (GEN_REWARDS.sol#850-941):
        External calls:
        - processFees(contractTokens) (GEN_REWARDS.sol#913)
                - (SendSuccess,None) = address(_to).call{value: _amount}() (GEN_REWARDS.sol#832)
                - uniswapV2Router.addLiquidityETH{value: BNBAmount}(address(this),tokenAmount,0,0,Wallet_Liquidity,block.timestamp) (GEN_REWARDS.sol#1030-10
```

STATIC ANALYSIS

```
INFO:Detectors:
RewardDistributor.process(uint256) (GEN_REWARDS.sol#1223-1248) has costly operations inside a loop:
        - currentIndex = 0 (GEN_REWARDS.sol#1236)
RewardDistributor.distributeDividend(address) (GEN_REWARDS.sol#1257-1275) has costly operations inside a loop:
        - totalDistributed += amount (GEN_REWARDS.sol#1268)
RewardDistributor.process(uint256) (GEN_REWARDS.sol#1223-1248) has costly operations inside a loop:
        - currentIndex ++ (GEN_REWARDS.sol#1245)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#costly-operations-inside-a-loop
INFO:Detectors:
GEN_REWARDS._transfer(address,address,uint256) (GEN_REWARDS.sol#850-941) has a high cyclomatic complexity (18).
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#cyclomatic-complexity
INFO:Detectors:
Pragma version0.8.19 (GEN_REWARDS.sol#15) necessitates a version too recent to be trusted. Consider deploying with 0.8.18.
solc-0.8.19 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity
INFO:Detectors:
Low level call in GEN_REWARDS.send_BNB(address,uint256) (GEN_REWARDS.sol#830-834):
        - (SendSuccess,None) = address(_to).call{value: _amount}() (GEN_REWARDS.sol#832)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls
```

```
INFO:Detectors:
Variable IUniswapV2Router02.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountADesired (GEN_REWARDS.sol#55) is too similar
 to IUniswapV2Router02.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountBDesired (GEN_REWARDS.sol#56)
Variable GEN_REWARDS.Project_Information().Owner_Wallet (GEN_REWARDS.sol#236) is too similar to GEN_REWARDS.constructor(string,string,uint256,uint256,addres
s)._OwnerWallet (GEN_REWARDS.sol#147)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar
INFO:Detectors:
GEN_REWARDS.setDistributionGas(uint256) (GEN_REWARDS.sol#651-656) uses literals with too many digits:
        - require(bool,string)(Gas_Amount <= 1000000000000000,RG) (GEN_REWARDS.sol#653)
GEN_REWARDS.slitherConstructorVariables() (GEN_REWARDS.sol#96-1124) uses literals with too many digits:
        - distributorGas = 500000 (GEN_REWARDS.sol#135)
RewardDistributor.slitherConstructorVariables() (GEN_REWARDS.sol#1129-1308) uses literals with too many digits:
        - minDistribution = 5000000000 (GEN_REWARDS.sol#1157)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits
INFO:Detectors:
RewardDistributor.RWDTKN (GEN_REWARDS.sol#1140) should be constant
RewardDistributor.dividendsPerShareAccuracyFactor (GEN_REWARDS.sol#1154) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant
INFO:Detectors:
GEN_REWARDS._decimals (GEN_REWARDS.sol#107) should be immutable
GEN_REWARDS.distributor (GEN_REWARDS.sol#216) should be immutable
RewardDistributor.DivRouter (GEN_REWARDS.sol#1142) should be immutable
RewardDistributor._token (GEN_REWARDS.sol#1131) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
INFO:Slither:GEN_REWARDS.sol analyzed (8 contracts with 93 detectors), 137 result(s) found
```

FUNCTIONAL TESTING

1- **Approve** (passed):
https://testnet.bscscan.com/tx/0xebca8cfc6b3d0dda383d9dad739b8828f4158ca28775bb8e80a633a91ff84632

2- **Increase Allowance** (passed):
https://testnet.bscscan.com/tx/0x8dd00d0feea13383c01e1e5ce3d2ff1725a10c69a5c9a47f6722c2bfddbd07ca

3- **Decrease Allowance** (passed):
https://testnet.bscscan.com/tx/0x340d2b437201b410881795e6b53ee4e599f60ef7ef56e809185e814a00ff98ad

4- **Rewards Exclude Wallet** (passed):
https://testnet.bscscan.com/tx/0x8875412e9efdc1af30675f2bc8d18bcf41e5a01d87f56fb402ba3b741c1b6807

5- **Add Liquidity Pair** (passed):
https://testnet.bscscan.com/tx/0xdbf425e18eeb7793f1baff295f35a6229a06a906c21722e80ed5c4622b6e27a2

FUNCTIONAL TESTING

6- **Set Fees** (passed):
https://testnet.bscscan.com/tx/0x0ecc1d247ceb1986a3947763b09e42724386064e65f89d89ae16029bc9e9c4c7

7- **Set Wallet Limits** (passed):
https://testnet.bscscan.com/tx/0xe51bf0c88557b1479e671acd80fbf50613639fca6c019960dfe101a475b37c2b

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      require(!Trade_Open, "OPN"); // Trade is already open - Trade cannot be paused
   feeProcessingEnabled = true
```

Suggestion:

To reduce centralization and potential manipulation, consider one of the following approaches:

1.Automatically enable trading after a specified condition, such as the completion of a presale, is met.
2.If manual activation is still desired, consider transferring the ownership of the contract to a trustworthy, third-party entity like a certified "PinkSale Safu" developer. This can give investors more confidence in the eventual activation of trading capabilities, mitigating concerns of potential bad-faith actions by the original owner.

MANUAL TESTING

Centralization – Liquidity is added to EOA.
Severity: Medium
Function: addLiquidity
Status: Open

Overview:
Liquidity is added to EOA. It may be drained by the Wallet Liquidity.

```
 function addLiquidity(uint256 tokenAmount, uint256 BNBAmount) private {

    _approve(address(this), address(uniswapV2Router), tokenAmount);
    uniswapV2Router.addLiquidityETH{value: BNBAmount}(
      address(this),
      tokenAmount,
      0,
      0,
      Wallet_Liquidity,
      block.timestamp
    );
  }
```

Suggestion:
It is suggested that the address should be a contract address or a dead address.

MANUAL TESTING

Centralization – Missing Require Check.
Severity: Medium
Function: Update_Wallet_Marketing
Status: Open

Overview:
The owner can set any arbitrary address excluding zero address as this is not recommended because if the owner will set the address to the contract address, then the Eth will not be sent to that address and the transaction will fail and this will lead to a potential honeypot in the contract.

```
function Update_Wallet_Marketing(

address payable Marketing_Wallet

    ) external onlyOwner {

// Update Marketing Wallet
require(Marketing_Wallet != address(0), "W"); // Enter a valid BSC Address
    Wallet_Marketing = payable(Marketing_Wallet);

  }
```

Suggestion:
It is recommended that the address should not be able to set as a contract address.

MANUAL TESTING

Centralization – Missing Events

Severity: Low

Subject: Missing Events

Status: Open

Overview:

They serve as a mechanism for emitting and recording data onto the blockchain, making it transparent and easily accessible.

```
function swapTriggerCount(uint256 Transaction_Count) external
onlyOwner {
    swapTrigger = Transaction_Count + 1;
  }
function burnFromTotalSupply(bool true_or_false) external
onlyOwner {
    burnFromSupply = true_or_false;
  }
function noFeeWalletTransfers(bool true_or_false) external
onlyOwner {
    no_Fee_Transfers = true_or_false;
   }
 function Update_Wallet_Liquidity(

address Liquidity_Collection_Wallet
```

MANUAL TESTING

```
    ) external onlyOwner {

// Update LP Collection Wallet
require(Liquidity_Collection_Wallet != address(0), "W"); // Enter
a valid BSC Address
    Wallet_Liquidity = Liquidity_Collection_Wallet;

  }
  function Update_Wallet_Marketing(

address payable Marketing_Wallet

    ) external onlyOwner {

// Update Marketing Wallet
require(Marketing_Wallet != address(0), "W"); // Enter a valid
BSC Address
    Wallet_Marketing = payable(Marketing_Wallet);

  }
```

MANUAL TESTING

Centralization - Missing Zero Address

Severity: Low

Subject: Shadowing Local

Status: Open

Overview:

functions can take a zero address as a parameter (0x00000...). If a function parameter of address type is not properly validated by checking for zero addresses, there could be serious consequences for the contract's functionality.

```
 function addLiquidityPair(

address Wallet_Address,
bool true_or_false)

external onlyOwner {

    _isPair[Wallet_Address] = true_or_false;
    _isLimitExempt[Wallet_Address] = true_or_false;

 }
```

MANUAL TESTING

Centralization - Local Variable Shadowing

Severity: Low

Subject: Shadowing Local

Status: Open

```
function allowance(address owner, address spender) public view
override returns (uint256) {
return _allowances[owner][spender];
 }
function _approve(address owner, address spender, uint256
amount) private {
require(owner != address(0), "APO"); // BEP20: approve from the
zero address
require(spender != address(0), "APS"); // BEP20: approve from
the zero address

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

Suggestion:

Rename the local variable that shadows another component.

MANUAL TESTING

Optimization

Severity: Optimization

Subject: Remove unused code.

Status: Open

Overview:

Unused variables are allowed in Solidity, and they do. not pose a direct security issue. It is the best practice. though to avoid them.

```
event LiquidityAdded(uint256 Tokens_Amount, uint256 BNB_Amount);
```

DISCLAIMER

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