auditace.tech

AuditAce

FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

ASEC

DATED : 13 June 23'

HIGH RISK FINDING

Centralization – Trades must be enabled

Severity: High

function: enableTrading

Status: Not Resolved

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() public onlyOwner {
    require(!tradingEnabled, "Trading already enabled!");
    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 – FSEC

Date: 13 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	1	0	0	0
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:
Contract has been tested on binance smart chain testnet which can be found in below link:
https://testnet.bscscan.com/token/0xeC29579C7d0284A61edCc32A31642C686261abFE

Token Information

Token Name : AntiSEC

Token Symbol: ASEC

Decimals: 18

Token Supply: 500,000,000,000

Token Address:
0x9Df6Ec8EAF159B6D1d0A689E7e04b28e7817d4fF

Checksum:
3939bbcfb4f12229165b8412cb8898843805b775

Owner:
0x7f98dD4F67AF4E7B8fAc0334b30aD1058224a3AA

Deployer:
0x7f98dD4F67AF4E7B8fAc0334b30aD1058224a3AA

TOKEN OVERVIEW

Fees:

Buy Fees: 0-12%

Sell Fees: 0-12%

Transfer Fees: 0-12%

Fees Privilege: Owner

Ownership: Owned

Minting: None

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Privileges: - initial distribution of the token

- enabling trades manual

- modifying fees

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

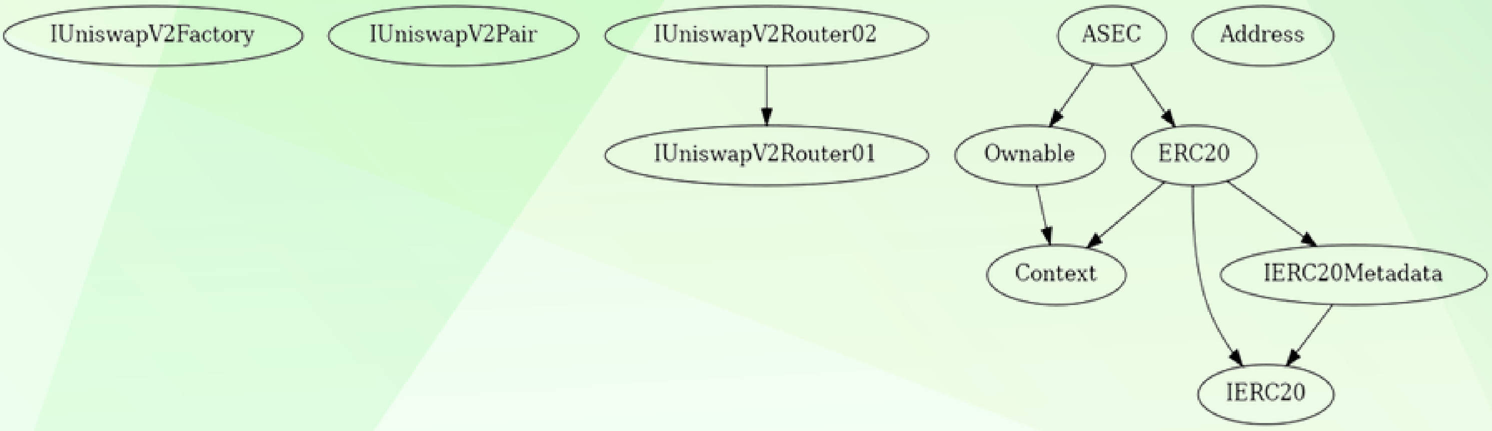
CLASSIFICATION OF RISK

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	0
◆ Low-Risk	0
◆ Gas Optimization / Suggestions	0

INHERITANCE TREE



POINTS TO NOTE

- Sum of buy and sell fee can not exceed 12% (buy + sell <= 12%)
- Owner is able to change transfer fee in range (0-12%)
- Owner is not able to set max buy/sell/transfer/hold amount
- 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 has 100% of total supply after deployment
- Owner must enable trades manually

CONTRACT ASSESMENT

```
|  Contract  |        Type        |       Bases      |                  |                 |
|:----------:|:-------------------:|:----------------:|:----------------:|:---------------:|
|     └      |  **Function Name**  |  **Visibility**  |  **Mutability**  |  **Modifiers**  |
||||||
| **IUniswapV2Factory** | Interface |  |||
| └ | feeTo | External ❗ |   |NO ❗ |
| └ | feeToSetter | External ❗ |   |NO ❗ |
| └ | getPair | External ❗ |   |NO ❗ |
| └ | allPairs | External ❗ |   |NO ❗ |
| └ | allPairsLength | External ❗ |   |NO ❗ |
| └ | createPair | External ❗ | 🛑  |NO ❗ |
| └ | setFeeTo | External ❗ | 🛑  |NO ❗ |
| └ | setFeeToSetter | External ❗ | 🛑  |NO ❗ |
||||||
| **IUniswapV2Pair** | Interface |  |||
| └ | name | External ❗ |   |NO ❗ |
| └ | symbol | External ❗ |   |NO ❗ |
| └ | decimals | External ❗ |   |NO ❗ |
| └ | totalSupply | External ❗ |   |NO ❗ |
| └ | balanceOf | External ❗ |   |NO ❗ |
| └ | allowance | External ❗ |   |NO ❗ |
| └ | approve | External ❗ | 🛑  |NO ❗ |
| └ | transfer | External ❗ | 🛑  |NO ❗ |
| └ | transferFrom | External ❗ | 🛑  |NO ❗ |
| └ | DOMAIN_SEPARATOR | External ❗ |   |NO ❗ |
| └ | PERMIT_TYPEHASH | External ❗ |   |NO ❗ |
| └ | nonces | External ❗ |   |NO ❗ |
| └ | permit | External ❗ | 🛑  |NO ❗ |
| └ | MINIMUM_LIQUIDITY | External ❗ |   |NO ❗ |
| └ | factory | External ❗ |   |NO ❗ |
| └ | token0 | External ❗ |   |NO ❗ |
| └ | token1 | External ❗ |   |NO ❗ |
| └ | getReserves | External ❗ |   |NO ❗ |
| └ | price0CumulativeLast | External ❗ |   |NO ❗ |
| └ | price1CumulativeLast | External ❗ |   |NO ❗ |
| └ | kLast | External ❗ |   |NO ❗ |
| └ | mint | External ❗ | 🛑  |NO ❗ |
| └ | burn | External ❗ | 🛑  |NO ❗ |
| └ | swap | External ❗ | 🛑  |NO ❗ |
| └ | skim | External ❗ | 🛑  |NO ❗ |
| └ | sync | External ❗ | 🛑  |NO ❗ |
```

CONTRACT ASSESMENT

```
| └ | initialize | External ❗️ | 🛑  |NO ❗️ |
||||||
| **IUniswapV2Router01** | Interface |  |||
| └ | factory | External ❗️ |   |NO ❗️ |
| └ | WETH | External ❗️ |   |NO ❗️ |
| └ | addLiquidity | External ❗️ | 🛑  |NO ❗️ |
| └ | addLiquidityETH | External ❗️ |  💵 |NO ❗️ |
| └ | removeLiquidity | External ❗️ | 🛑  |NO ❗️ |
| └ | removeLiquidityETH | External ❗️ | 🛑  |NO ❗️ |
| └ | removeLiquidityWithPermit | External ❗️ | 🛑  |NO ❗️ |
| └ | removeLiquidityETHWithPermit | External ❗️ | 🛑  |NO ❗️ |
| └ | swapExactTokensForTokens | External ❗️ | 🛑  |NO ❗️ |
| └ | swapTokensForExactTokens | External ❗️ | 🛑  |NO ❗️ |
| └ | swapExactETHForTokens | External ❗️ |  💵 |NO ❗️ |
| └ | swapTokensForExactETH | External ❗️ | 🛑  |NO ❗️ |
| └ | swapExactTokensForETH | External ❗️ | 🛑  |NO ❗️ |
| └ | swapETHForExactTokens | External ❗️ |  💵 |NO ❗️ |
| └ | quote | External ❗️ |   |NO ❗️ |
| └ | getAmountOut | External ❗️ |   |NO ❗️ |
| └ | getAmountIn | External ❗️ |   |NO ❗️ |
| └ | getAmountsOut | External ❗️ |   |NO ❗️ |
| └ | getAmountsIn | External ❗️ |   |NO ❗️ |
||||||
| **IUniswapV2Router02** | Interface | IUniswapV2Router01 |||
| └ | removeLiquidityETHSupportingFeeOnTransferTokens | External ❗️ | 🛑  |NO ❗️ |
| └ | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External ❗️ | 🛑  |NO ❗️ |
| └ | swapExactTokensForTokensSupportingFeeOnTransferTokens | External ❗️ | 🛑  |NO ❗️ |
| └ | swapExactETHForTokensSupportingFeeOnTransferTokens | External ❗️ |  💵 |NO ❗️ |
| └ | swapExactTokensForETHSupportingFeeOnTransferTokens | External ❗️ | 🛑  |NO ❗️ |
||||||
| **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 ❗️ |
```

CONTRACT ASSESMENT

```
||||||
| **Address** | Library |  |||
| └ | isContract | Internal 🔒 |   | |
| └ | sendValue | Internal 🔒 | 🛑  | |
| └ | functionCall | Internal 🔒 | 🛑  | |
| └ | functionCall | Internal 🔒 | 🛑  | |
| └ | functionCallWithValue | Internal 🔒 | 🛑  | |
| └ | functionCallWithValue | Internal 🔒 | 🛑  | |
| └ | functionStaticCall | Internal 🔒 |   | |
| └ | functionStaticCall | Internal 🔒 |   | |
| └ | functionDelegateCall | Internal 🔒 | 🛑  | |
| └ | functionDelegateCall | Internal 🔒 | 🛑  | |
| └ | verifyCallResultFromTarget | Internal 🔒 |   | |
| └ | verifyCallResult | Internal 🔒 |   | |
| └ | _revert | Private 🔐 |   | |
||||||
| **Context** | Implementation |  |||
| └ | _msgSender | Internal 🔒 |   | |
| └ | _msgData | Internal 🔒 |   | |
||||||
| **Ownable** | Implementation | Context |||
| └ | <Constructor> | Public ❗️ | 🛑  |NO ❗️ |
| └ | owner | Public ❗️ |   |NO ❗️ |
| └ | renounceOwnership | Public ❗️ | 🛑  | onlyOwner |
| └ | transferOwnership | Public ❗️ | 🛑  | onlyOwner |
||||||
| **ERC20** | Implementation | Context, IERC20, IERC20Metadata |||
| └ | <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 🔒 | 🛑  | |
```

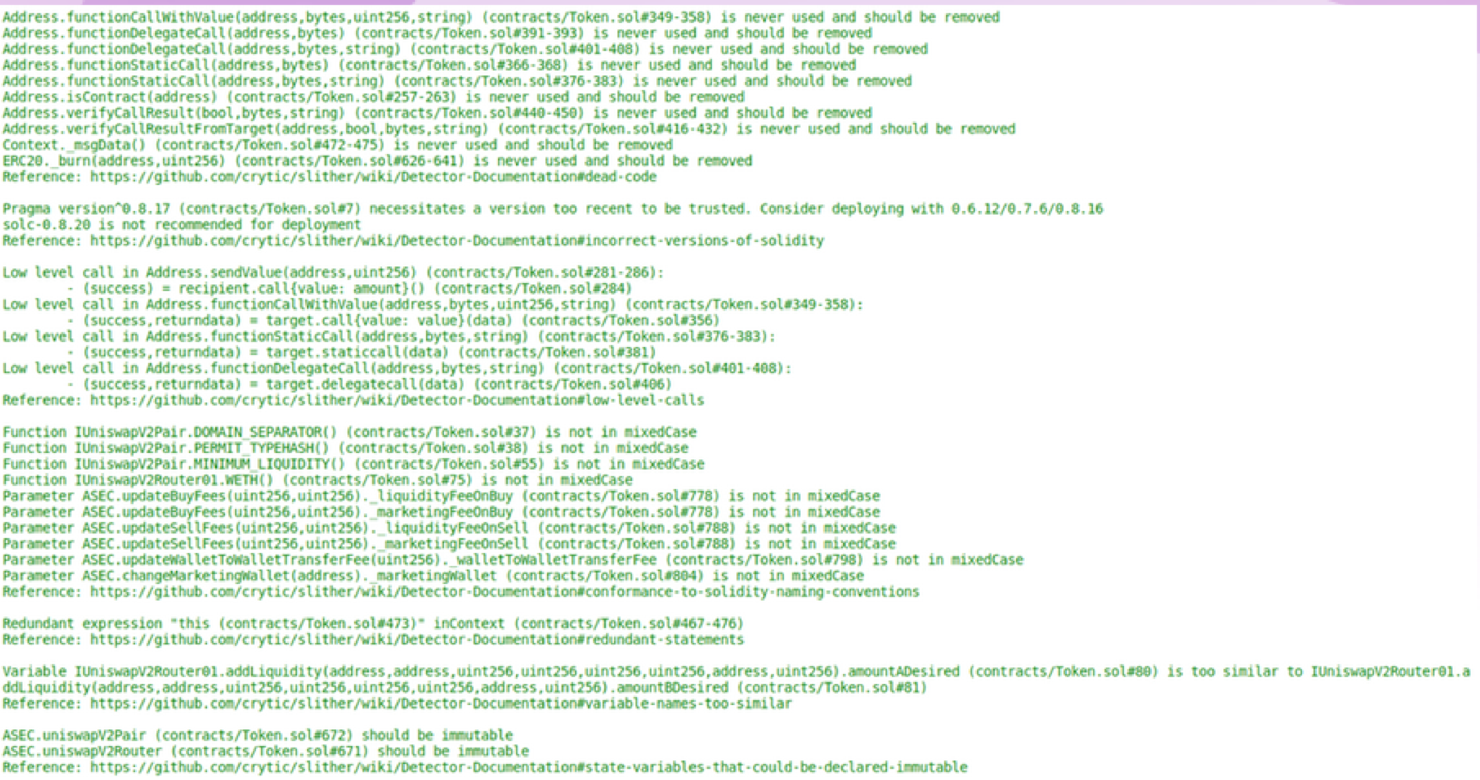
CONTRACT ASSESMENT

```
| └ | _approve | Internal 🔒 | 🛑  | |
| └ | _beforeTokenTransfer | Internal 🔒 | 🛑  | |
| └ | _afterTokenTransfer | Internal 🔒 | 🛑  | |
||||||
| **ASEC** | Implementation | ERC20, Ownable |||
| └ | <Constructor> | Public ❗️ | 🛑  | ERC20 |
| └ | <Receive Ether> | External ❗️ | 💵 |NO ❗️ |
| └ | enableTrading | Public ❗️ | 🛑  | onlyOwner |
| └ | claimStuckTokens | External ❗️ | 🛑  | onlyOwner |
| └ | excludeFromFees | External ❗️ | 🛑  | onlyOwner |
| └ | isExcludedFromFees | Public ❗️ |   |NO ❗️ |
| └ | updateBuyFees | External ❗️ | 🛑  | onlyOwner |
| └ | updateSellFees | External ❗️ | 🛑  | onlyOwner |
| └ | updateWalletToWalletTransferFee | External ❗️ | 🛑  | onlyOwner |
| └ | changeMarketingWallet | External ❗️ | 🛑  | onlyOwner |
| └ | _transfer | Internal 🔒 | 🛑  | |
| └ | setSwapTokensAtAmount | External ❗️ | 🛑  | onlyOwner |
| └ | swapAndLiquify | Private 🔐 | 🛑  | |
| └ | swapAndSendMarketing | Private 🔐 | 🛑  | |


### Legend

|  Symbol  |  Meaning  |
|:--------:|-----------|
|    🛑    | Function can modify state |
|    💵    | Function is payable |
```

STATIC ANALYSIS



```
Address.functionCallWithValue(address,bytes,uint256,string) (contracts/Token.sol#349-358) is never used and should be removed
Address.functionDelegateCall(address,bytes) (contracts/Token.sol#391-393) is never used and should be removed
Address.functionDelegateCall(address,bytes,string) (contracts/Token.sol#401-408) is never used and should be removed
Address.functionStaticCall(address,bytes) (contracts/Token.sol#366-368) is never used and should be removed
Address.functionStaticCall(address,bytes,string) (contracts/Token.sol#376-383) is never used and should be removed
Address.isContract(address) (contracts/Token.sol#257-263) is never used and should be removed
Address.verifyCallResult(bool,bytes,string) (contracts/Token.sol#440-450) is never used and should be removed
Address.verifyCallResultFromTarget(address,bool,bytes,string) (contracts/Token.sol#416-432) is never used and should be removed
Context._msgData() (contracts/Token.sol#472-475) is never used and should be removed
ERC20._burn(address,uint256) (contracts/Token.sol#626-641) 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#7) 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#281-286):
        - (success) = recipient.call{value: amount}() (contracts/Token.sol#284)
Low level call in Address.functionCallWithValue(address,bytes,uint256,string) (contracts/Token.sol#349-358):
        - (success,returndata) = target.call{value: value}(data) (contracts/Token.sol#356)
Low level call in Address.functionStaticCall(address,bytes,string) (contracts/Token.sol#376-383):
        - (success,returndata) = target.staticcall(data) (contracts/Token.sol#381)
Low level call in Address.functionDelegateCall(address,bytes,string) (contracts/Token.sol#401-408):
        - (success,returndata) = target.delegatecall(data) (contracts/Token.sol#406)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls

Function IUniswapV2Pair.DOMAIN_SEPARATOR() (contracts/Token.sol#37) is not in mixedCase
Function IUniswapV2Pair.PERMIT_TYPEHASH() (contracts/Token.sol#38) is not in mixedCase
Function IUniswapV2Pair.MINIMUM_LIQUIDITY() (contracts/Token.sol#55) is not in mixedCase
Function IUniswapV2Router01.WETH() (contracts/Token.sol#75) is not in mixedCase
Parameter ASEC.updateBuyFees(uint256,uint256)._liquidityFeeOnBuy (contracts/Token.sol#778) is not in mixedCase
Parameter ASEC.updateBuyFees(uint256,uint256)._marketingFeeOnBuy (contracts/Token.sol#778) is not in mixedCase
Parameter ASEC.updateSellFees(uint256,uint256)._liquidityFeeOnSell (contracts/Token.sol#788) is not in mixedCase
Parameter ASEC.updateSellFees(uint256,uint256)._marketingFeeOnSell (contracts/Token.sol#788) is not in mixedCase
Parameter ASEC.updateWalletToWalletTransferFee(uint256)._walletToWalletTransferFee (contracts/Token.sol#798) is not in mixedCase
Parameter ASEC.changeMarketingWallet(address)._marketingWallet (contracts/Token.sol#804) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

Redundant expression "this (contracts/Token.sol#473)" inContext (contracts/Token.sol#467-476)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements

Variable IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountADesired (contracts/Token.sol#80) is too similar to IUniswapV2Router01.a
ddLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountBDesired (contracts/Token.sol#81)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

ASEC.uniswapV2Pair (contracts/Token.sol#672) should be immutable
ASEC.uniswapV2Router (contracts/Token.sol#671) 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/0xc0a7637cdb7a856bdf16b6537cc9caf0f2a5c140aae17624cb449ee94a07c845

2- Buying when excluded from fees (0% tax) (passed):

https://testnet.bscscan.com/tx/0xbeb36c67709b77068a3d80d8542781dbb88444be8b1cd3d92c95140033e268b9

3- Selling when excluded from fees (0% tax) (passed):

https://testnet.bscscan.com/tx/0x957956dc1f2d02932c2119b827050ab07685413d1dc2527d393e62cb3924c7e6

4- Transferring when excluded from fees (0% tax) (passed):

https://testnet.bscscan.com/tx/0x6485a800d91a7d38f6fc3934eda97a8f7da7aac15530a863d70629d6cb10b847

5- Buying when not excluded from fees (0-12% tax) (passed):

https://testnet.bscscan.com/tx/0x99c25805f4a3099d2a96cdce8fc995c6c9558b61c2028079745ef28eebb8a54e

6- Selling when not excluded from fees (0-12% tax) (passed):

https://testnet.bscscan.com/tx/0x55e61723f80354c0eba625c8e3e8b1623d195a7c3d06c06e83b695a390a7695d

FUNCTIONAL TESTING

7- Transferring when not excluded from fees (0-12% tax) **(passed):** https://testnet.bscscan.com/tx/0x4953aa8afbafc494976e132f32332143dc7818fb7630180e8d7f2d25b6728b71

8- Internal swap (BNB to marketing wallet + auto-liquidity) **(passed):** https://testnet.bscscan.com/tx/0x55e61723f80354c0eba625c8e3e8b1623d195a7c3d06c06e83b695a390a7695d

FUNCTIONAL TESTING

Centralization – Trades must be enabled

Severity: **High**

function: enableTrading

Status: Not Resolved

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() public onlyOwner {
    require(!tradingEnabled, "Trading already enabled!");
    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

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https://auditace.tech/

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https://twitter.com/auditace_

https://github.com/Audit-Ace