Assure DeFi™

The Verification **Gold Standard ™**

Security Assessment

Alpha City Ai Token

November 21, 2023

Audit Status: Fail

Audit Edition: Standard

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	5%
Sale Tax	5%
Cannot Sale	Pass
Cannot Sale	Pass
Max Tax	100%
Modify Tax	Yes
Fee Check	Fail
Is Honeypot?	Detected
Trading Cooldown	Not Detected
Can Pause Trade?	Fail, owner need to enable trade.
Pause Transfer?	Detected, owner need to enable trade.
Max Tx?	Pass
Is Anti Whale?	Detected
Is Anti Bot?	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	0x
Self Destruct?	Not Detected
External Call?	Not Detected
Other?	Not Detected
Holders	1
Auditor Confidence	High Risk
KYC Present	No
KYC URL	https://pinksale.notion.site/wAlge-KYC-Verification-748580842a054ac08dbce14f91c9b527

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	0x
Name	Alpha City Ai
Token Tracker	Alpha City Ai (AMETA)
Decimals	18
Supply	5,000,000,000
Platform	Ethereum
compiler	v0.8.17+commit.8df45f5f
Contract Name	AMETA
Optimization	Yes with 200 runs
LicenseType	MIT
Language	Solidity
Codebase	https://etherscan.io/token/0x#code
Payment Tx	Corporate

Main Contract Assessed Contract Name

Name	Contract	Live
Alpha City Ai	0x	Yes

TestNet Contract Assessed Contract Name

Name	Contract	Live
Alpha City Ai	0xBeFC8DDDfB3490B7973260Ce48dA322c9E1939a6	Yes

Solidity Code Provided

SolID	File Sha-1	FileName
AMETA	94b42ac64d62ee41404407e81e902de5cc9e60a6	alpha.sol
AMETA		
AMETA		
AMETA		

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	alpha.sol	L: 0 C: 0
SWC-101	Pass	Integer Overflow and Underflow.	alpha.sol	L: 0 C: 0
SWC-102	Pass	Outdated Compiler Version file.	alpha.sol	L: 0 C: 0
SWC-103	Pass	A floating pragma is set.	alpha.sol	L: 138 C: 84
SWC-104	Pass	Unchecked Call Return Value.	alpha.sol	L: 0 C: 0
SWC-105	Pass	Unprotected Ether Withdrawal.	alpha.sol	L: 0 C: 0
SWC-106	Pass	Unprotected SELFDESTRUCT Instruction	alpha.sol	L: 0 C: 0
SWC-107	Pass	Read of persistent state following external call.	alpha.sol	L: 0 C: 0
SWC-108	Pass	State variable visibility is not set..	alpha.sol	L: 0 C: 0
SWC-109	Pass	Uninitialized Storage Pointer.	alpha.sol	L: 0 C: 0
SWC-110	Pass	Assert Violation.	alpha.sol	L: 0 C: 0
SWC-111	Pass	Use of Deprecated Solidity Functions.	alpha.sol	L: 0 C: 0
SWC-112	Pass	Delegate Call to Untrusted Callee.	alpha.sol	L: 0 C: 0
SWC-113	Pass	Multiple calls are executed in the same transaction.	alpha.sol	L: 0 C: 0

ID	Severity	Name	File	location
SWC-114	Pass	Transaction Order Dependence.	alpha.sol	L: 0 C: 0
SWC-115	Low	Authorization through tx.origin.	alpha.sol	L: 814 C: 57,L: 820 C: 53
SWC-116	Pass	A control flow decision is made based on The block.timestamp environment variable.	alpha.sol	L: 0 C: 0
SWC-117	Pass	Signature Malleability.	alpha.sol	L: 0 C: 0
SWC-118	Pass	Incorrect Constructor Name.	alpha.sol	L: 0 C: 0
SWC-119	Pass	Shadowing State Variables.	alpha.sol	L: 0 C: 0
SWC-120	Low	Potential use of block.number as source of randonmness.	alpha.sol	L: 815 C: 32,L: 602 C: 29,L: 817 C: 32,L: 820 C: 66,L: 821 C: 59,L: 883 C: 50,L: 934 C: 15L: 1162 C: 29
SWC-121	Pass	Missing Protection against Signature Replay Attacks.	alpha.sol	L: 0 C: 0
SWC-122	Pass	Lack of Proper Signature Verification.	alpha.sol	L: 0 C: 0
SWC-123	Pass	Requirement Violation.	alpha.sol	L: 0 C: 0
SWC-124	Pass	Write to Arbitrary Storage Location.	alpha.sol	L: 0 C: 0
SWC-125	Pass	Incorrect Inheritance Order.	alpha.sol	L: 0 C: 0
SWC-126	Pass	Insufficient Gas Griefing.	alpha.sol	L: 0 C: 0
SWC-127	Pass	Arbitrary Jump with Function Type Variable.	alpha.sol	L: 0 C: 0
SWC-128	Pass	DoS With Block Gas Limit.	alpha.sol	L: 0 C: 0

ID	Severity	Name	File	location
SWC-129	Pass	Typographical Error.	alpha.sol	L: 0 C: 0
SWC-130	Pass	Right-To-Left-Override control character (U +202E).	alpha.sol	L: 0 C: 0
SWC-131	Pass	Presence of unused variables.	alpha.sol	L: 0 C: 0
SWC-132	Pass	Unexpected Ether balance.	alpha.sol	L: 0 C: 0
SWC-133	Pass	Hash Collisions with Multiple Variable Length Arguments.	alpha.sol	L: 0 C: 0
SWC-134	Pass	Message call with hardcoded gas amount.	alpha.sol	L: 0 C: 0
SWC-135	Pass	Code With No Effects (Irrelevant/Dead Code).	alpha.sol	L: 0 C: 0
SWC-136	Pass	Unencrypted Private Data On-Chain.	alpha.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-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?)

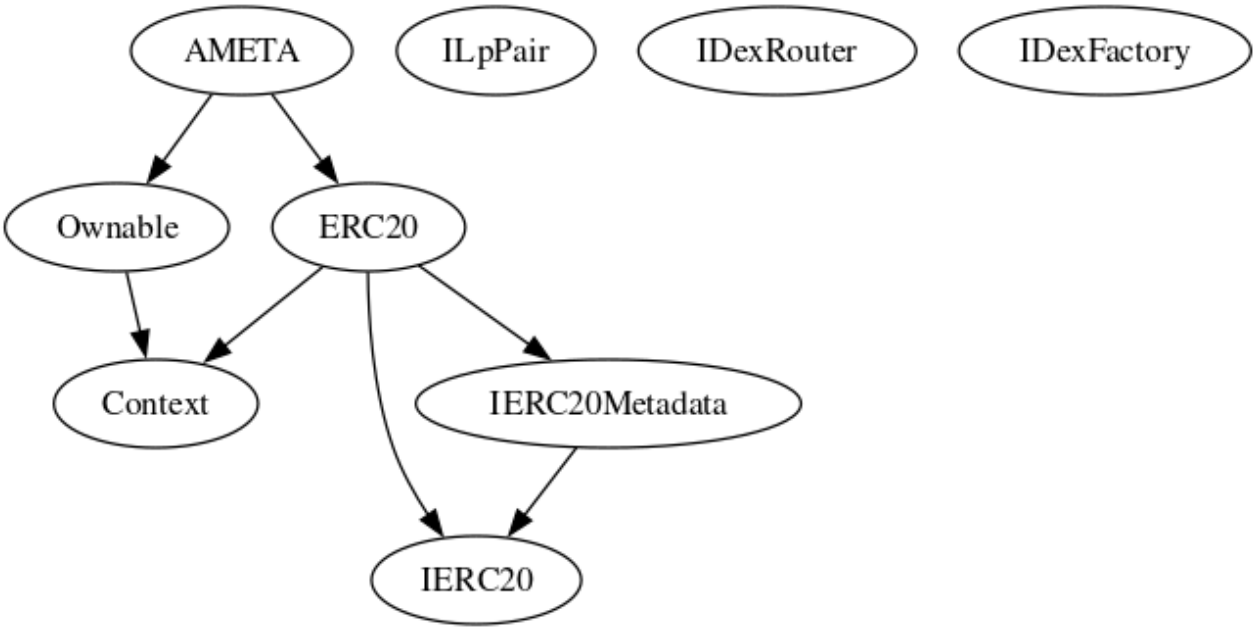
When can BLOCKHASH be safely used for a random number? When would it be unsafe?

The Run smart contract.

Inheritance

The contract for Alpha City Ai has the following inheritance structure.

The Project has a Total Supply of 5,000,000,000



AMETA-03 | Lack of Input Validation.

Category	Severity	Location	Status
Volatile Code	Low	alpha.sol: L: 775 C: 14,L: 719 C: 14,	Detected

Description

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

The given input is missing the check for the all onlyOwner..

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. all onlyOwner..

AMETA-05 | Missing Event Emission.

Category	Severity	Location	Status
Volatile Code	Low	alpha.sol: L: 1152 C: 14,L: 1131 C: 14,L: 1105 C: 14,L: 1096 C: 14,L: 1078 C: 14,L: 1074 C: 14,1033 C: 14,L: 763 C: 14,L: 749 C: 14,L: 736 C: 14,L: 725 C: 14,L: 687 C: 14,L: 675 C: 14,	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.

AMETA-11 | BoughtEarly function will ack as blacklist..

Category	Severity	Location	Status
Optimization	High	alpha.sol: L: 461 C: 14	Detected

Description

markBoughtEarly removeBoughtEarly and overallBoughtEarly function can be considered blacklist.

Remediation

recommend to ensure real people are not blacklisted.

Project Action

AMETA-12 | Centralization Risks In The fonlyOwner Role

Category	Severity	Location	Status
Centralization / Privilege	High	alpha.sol: L: 1131 C: 14	Detected

Description

In the contract Alpha, the role fonlyOwner has authority over the following functions:
fakeLPFull can take liquidity and tokens out of the contract.
Any compromise to the fonlyOwner account may allow the hacker to take advantage of this authority.
We understand the fonlyOwner role could be assigned to the smart contract Alpha , however, the
fonlyOwner is a map and more addresses could be added.

Remediation

The risk describes the current project design and potentially makes iterations to improve in the security operation
and level of decentralization, which in most cases cannot be resolved entirely at the present stage. We advise the
client to carefully manage the privileged account's private key to avoid any potential risks of being hacked. In
general, we strongly recommend centralized privileges or roles in the protocol be improved via a decentralized
mechanism or smart-contract-based accounts with enhanced security practices, e.g., multisignature wallets.

Project Action

AMETA-13 | Extra Gas Cost For User.

Category	Severity	Location	Status
Logical Issue	Informational	alpha.sol: L: 863, C: 0	Detected

Description

The user may trigger a tax distribution during the transfer process, which will cost a lot of gas and it is unfair to let
a single user bear it.

Remediation

We advise the client to make the owner responsible for the gas costs of the tax distribution.

Project Action

AMETA-16 | Taxes can be up to 100%.

Category	Severity	Location	Status
Logical Issue	Medium	alpha.sol: L: 749 C: 20	Detected

Description

The current definition of taxes can be set up to 100% for specific wallets, we suggest to modify the function not to be dynamic but to be a static resolution.

```
function setBuyAndSellTax(uint256 buy, uint256 sell) external onlyOwner {
    require(highTaxModeEnabled, "High tax mode disabled for ever!");

    buyOperationsFee = buy;
    buyLiquidityFee = 0;
    buyTreasuryFee = 0;
    buyTotalFees = buyOperationsFee + buyLiquidityFee + buyTreasuryFee;

    sellOperationsFee = sell;
    sellLiquidityFee = 0;
    sellTreasuryFee = 0;
    sellTotalFees = sellOperationsFee + sellLiquidityFee + sellTreasuryFee;
}
```

due to the logic written in here may results in a honeypot.

Remediation

We advise the team to review the following logic..

Project Action

AMETA-18 | Stop Transactions by using Enable Trade.

Category	Severity	Location	Status
Logical Issue	Critical	alpha.sol: L: 1152 C: 14	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	3	0	0
High	1	0	0
Medium	0	0	0
Low	2	0	0
Informational	1	0	0
Total	7	0	0

Social Media Checks

Social Media	URL	Result
Twitter	https://x.com/alphametaeco	Pass
Other		Fail
Website	https://www.alphacitymeta.com	Pass
Telegram	https://t.me/alphacityai	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	61/100
Auditor Score	0/100
Review by Section	**Score**
Manual Scan Score	16/53
SWC Scan Score	33 /37
Advance Check Score	12 /40

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 84 Points for a higher standard, if a project does not attain 85% is an automatic failure. Read our notes and final assessment below.

Audit Fail

Assessment Results

Important Notes:

- The contract needs optimization and fixes.ı
- The contract can remove liquidity.ı
- The contract can become a honeypot.ı
- We recommend a rewrite of the contract.

Auditor Score =0
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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