

**Building the Futuristic Blockchain Ecosystem** 

### SECURITY AUDIT REPORT

xΑl



### **TOKEN OVERVIEW**

#### **Risk Findings**

Severity	Found	
High	1	
Medium	0	
Low	0	
Informational	0	

#### **Centralization Risks**

Owner Privileges	Description
Can Owner Set Taxes >25%?	Not Detected
Owner needs to enable trading?	Yes, owner needs to enable trades
Can Owner Disable Trades ?	Not Detected
Can Owner Mint ?	Not Detected
Can Owner Blacklist ?	Not Detected
Can Owner set Max Wallet amount?	Not Detected
Can Owner Set Max TX amount?	Not Detected



# TABLE OF CONTENTS

02	Token Overview
03	Table of Contents
04	Overview
05	Contract Details ————————————————————————————————————
06	Audit Methodology
07	Vulnerabilities Checklist ————————————————————————————————————
08	Risk Classification
09	Inheritence Trees ———————————————————————————————————
10	Function Details ————————————————————————————————————
14	Testnet Version
16	Manual Review ————————————————————————————————————
	mandat Noview
18	About Expelee
19	Disclaimer



# **OVERVIEW**

The Expelee team has performed a line-by-line manual analysis and automated review of the smart contract. The smart contract was analysed mainly for common smart contract vulnerabilities, exploits, and manipulation hacks. According to the smart contract audit:

Audit Result	Passed With High Risk
KYC Verification	_
Audit Date	16 July 2023



### **CONTRACT DETAILS**

**Token Name: xAl** 

Symbol: xAI

**Network: Binance Smart Chain** 

**Language: Solidity** 

**Contract Address:** 

0x2A23f87954277dd8eAe84c706d3879c9880B08E4

Total Supply: 1,000,000,000,000

**Owner's Wallet:** 

0x9951708527E2E028Ab18951e42Aee8395bF5f830

Deployer's Wallet:

0x9951708527E2E028Ab18951e42Aee8395bF5f830

Testnet.

https://testnet.bscscan.com/token/0x91f49a7D8fF884Db30

360ea1fbB8aC73bF80A4A0



### AUDIT METHODOLOGY

#### **Audit Details**

Our comprehensive audit report provides a full overview of the audited system's architecture, smart contract codebase, and details on any vulnerabilities found within the system.

#### **Audit Goals**

The audit goal is to ensure that the project is built to protect investors and users, preventing potentially catastrophic vulnerabilities after launch, that lead to scams and rugpulls.

#### **Code Quality**

Our analysis includes both automatic tests and manual code analysis for the following aspects:

- Exploits
- Back-doors
- Vulnerability
- Accuracy
- Readability

#### **Tools**

- DE
- Open Zeppelin
- Code Analyzer
- Solidity Code
- Compiler
- Hardhat



## VULNERABILITY CHECKS

Design Logic	Passed
Compiler warnings	Passed
Private user data leaks	Passed
Timestamps dependence	Passed
Integer overflow and underflow	Passed
Race conditions & reentrancy. Cross-function race conditions	Passed
Possible delays in data delivery	Passed
Oracle calls	Passed
Front Running	Passed
DoS with Revert	Passed
DoS with block gas limit	Passed
Methods execution permissions	Passed
Economy model	Passed
Impact of the exchange rate on the logic	Passed
Malicious event log	Passed
Scoping and declarations	Passed
Uninitialized storage pointers	Passed
Arithmetic accuracy	Passed
Cross-function race conditions	Passed
Safe Zepplin module	Passed



### RISK CLASSIFICATION

When performing smart contract audits, our specialists look for known vulnerabilities as well as logical and acces control issues within the code. The exploitation of these issues by malicious actors may cause serious financial damage to projects that failed to get an audit in time. We categorize these vulnerabilities by the following levels:

#### **High Risk**

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

#### **Medium Risk**

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

#### **Low Risk**

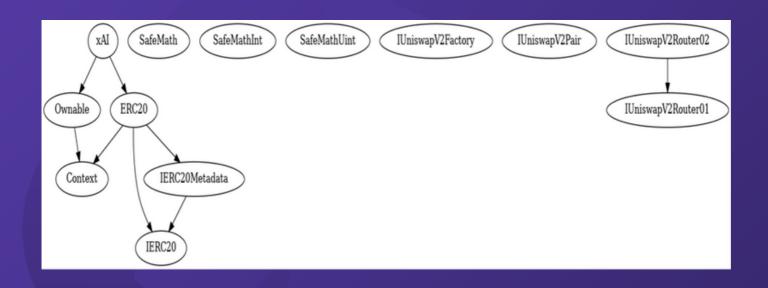
Issues on this level are minor details and warning that can remain unfixed.

#### **Informational**

Issues on this level are minor details and warning that can remain unfixed.



### **INHERITANCE TREES**





```
Contract |
       | **Function Name** | **Visibility** | **Mutability** | **Modifiers** |
| **Context** | Implementation | ||
 L | msgSender | Internal 🔒 | | |
 L | msgData | Internal 🔒 | | |
| **Ownable** | Implementation | Context |||
 └ | <Constructor> | Public | | ● | NO | |
 L owner | Public | NO |
 L | transferOwnership | Public | | | onlyOwner |
 L | _transferOwnership | Internal 🔒 | 🛑 | |
**SafeMath** | Library | ||
 L | add | Internal 🔒 | ||
 L | sub | Internal 🔒 | | |
 L | sub | Internal 🔒 | | |
 L | mul | Internal 🔒 | | |
 L | div | Internal 🔒 | ||
 L | div | Internal 🔒 | ||
 L | mod | Internal 🔒 | | |
 L | mod | Internal 🔒 | | |
 **SafeMathInt** | Library | ||
 L | mul | Internal 🔒 | | |
 L | div | Internal 🔒 | ||
 L | sub | Internal 🔒 | | |
 L | add | Internal 🔒 | | |
 L | abs | Internal 🔒 | ||
 L | toUint256Safe | Internal 🔒 | | |
**SafeMathUint** | Library | ||
L | toInt256Safe | Internal 🔒 | | |
**IUniswapV2Factory** | Interface | ||
 L | feeTo | External | | NO | |
 | feeToSetter | External | NO | |
 L | getPair | External | | NO | |
 L | allPairs | External | | NO | |
 | allPairsLength | External | NO | |
 | createPair | External | | | NO | |
 └ | setFeeTo | External | | ● |NO | |
 └ | setFeeToSetter | External | | ● |NO ! |
| **IUniswapV2Pair** | Interface | ||
```



```
I name | External | NO | |
 L | symbol | External | | | NO |
 L | decimals | External | | | NO |
 L | totalSupply | External | | | NO |
 | balanceOf | External | NO | |
 L | allowance | External | | | NO |
 | approve | External | | | NO | |
 L | transfer | External | | | NO |
 L | transferFrom | External | | | NO |
 L | DOMAIN SEPARATOR | External | | | NO | |
 L | PERMIT_TYPEHASH | External | | | NO | |
 L | nonces | External | | NO |
 └ | permit | External | | ● |NO |
 | MINIMUM LIQUIDITY | External | | | | NO | |
 | factory | External | NO | |
 L | token0 | External | | NO | |
 L | token | | External | | NO | |
 | getReserves | External | NO | |
 | price0CumulativeLast | External | NO | |
 | price1CumulativeLast | External | NO | |
 L|kLast|External | | NO |
| L | mint | External | | | NO |
 L|burn|External | | | NO |
 └ | swap | External | | ● |NO |
 L|skim|External | | NO |
 L|sync|External | | | NO |
| L | initialize | External | | | NO | |
 **IUniswapV2Router01** | Interface | ||
 L | factory | External | | | NO | |
 L|WETH|External | | NO | |
 L | addLiquidity | External | | | NO | |
 | addLiquidityETH | External | | | NO | |
 | removeLiquidity | External | | | NO | |
 | removeLiquidityWithPermit | External | | | NO | |
 └ | removeLiquidityETHWithPermit | External | | ● | NO | |
 | swapExactTokensForTokens | External | | | NO | |
 | swapTokensForExactTokens | External | |
 | swapTokensForExactETH | External
 | swapExactTokensForETH | External
 L | quote | External | | | NO | |
| L | getAmountOut | External | NO | |
```



```
L | getAmountIn | External | | NO | |
| getAmountsOut | External | NO | |
| getAmountsIn | External | NO | |
**IUniswapV2Router02** | Interface | IUniswapV2Router01 |||
| removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External | | | | NO | |
| swapExactTokensForTokensSupportingFeeOnTransferTokens | External | | | | NO | |
| swapExactETHForTokensSupportingFeeOnTransferTokens | External | | | | NO |
| swapExactTokensForETHSupportingFeeOnTransferTokens | External | | | NO | |
**IERC20** | Interface | |||
L | totalSupply | External | NO | |
L | balanceOf | External | | | NO | |
L | allowance | External | | NO | |
L | transfer | External | | | NO | |
| approve | External | | | NO | |
L | transferFrom | External | | | NO | |
**IERC20Metadata** | Interface | IERC20 |||
L | name | External | | NO | |
L | symbol | External | | NO | |
L | decimals | External | | NO | |
**ERC20** | Implementation | Context, IERC20, IERC20Metadata |||
└ | <Constructor> | Public | | ● | NO | |
L | name | Public | | NO | |
L | symbol | Public | | NO | |
L | decimals | Public | | NO |
L | totalSupply | Public | | NO |
L|balanceOf|Public | | NO | |
L | transfer | Public | | | NO | |
L | allowance | Public | | NO | |
L | approve | Public | | | NO |
L | transferFrom | Public | | | NO | |
increase Allowance | Public | | | NO |
| decreaseAllowance | Public | | | NO | |
L | transfer | Internal 🔒 | 🛑 | |
L | mint | Internal 🔒 | 🛑 | |
L| burn | Internal 🔒 | 🛑 ||
L | approve | Internal 🔒 | 🛑 | |
L| beforeTokenTransfer | Internal 🔒 | 🛑 | |
**xAI** | Implementation | ERC20, Ownable |||
```





### **TESTNET VERSION**

Adding Liquidity
Tx: https://testnet.bscscan.com/tx/0xa482b8cf5ddd9cd00c16761d714d9c0bf222c62c6c3f1bddd4e20eca81686e22
Buying when excluded from fees
Tx (0% tax): https://testnet.bscscan.com/tx/0x8195361d0d33a2d0a605ca14c9917919 5e3c50413f5e6d1bde5d970e5f6cbf36
Selling when excluded from fees <a>Tx (0% tax):</a>
https://testnet.bscscan.com/tx/0x564b654e4cd6e1c4a1c506542268504 93c19924f2981cd9c44dd856edee39363
Transferring when exclduded from fees
Tx (0% tax): https://testnet.bscscan.com/tx/0x8cd06964f697ebac4d86db03fe5b1f7a 819345ce2534d03a63b482fbe4cb05f8
Buying Tx (0-25% tax):
https://testnet.bscscan.com/tx/0x148ff6e4a17bb5d471c5519911fa00f6c14

ee8395bf5f830



### **TESTNET VERSION**

Selling  Tx (0-25% tax): https://testnet.bscscan.com 3db0977f8e0940f5abe6584	n/tx/0x4cf7800508b3b80d09a6172e3703f5eb 14220eb194
=======================================	
Transferring <	
Tx (0-25% tax):	
https://testnet.bscscan.com	n/tx/0x23dd292b175c8e92d4bc2d8e4c9e089
9a02cf5655459feff111281bf	fa47af3f
Internal swap (auto-liquidity	│BNB to marketing wallet) ✓
Tx:	
https://testnet.bscscan.com	n/address/0x9951708527e2e028ab18951e42a



#### **MANUAL REVIEW**

#### **Severity Criteria**

Expelee assesses the severity of disclosed vulnerabilities according to methodology based on OWASP standarts.

Vulnerabilities are dividend into three primary risk categroies:

High

Medium

Low

High-level considerations for vulnerabilities span the following key areas when conducting assessments:

- Malicious input handling
- Escalation of privileges
- Arithmetic
- Gas use

Overall Risk Severity					
Impact	HIGH	Medium	High	Critical	
	MEDIUM	Low	Medium	High	
	LOW	Note	Low	Medium	
		LOW	MEDIUM	HIGH	
	Likelihood				



#### **HIGH RISK FINDING**

#### Trades are disabled by default

**Category: Centralization** 

**Status: Open** 

**Severity: High** 

#### **Overview:**

The contract has been structured such that all trading is disabled by default, necessitating the contract owner's manual intervention to enable trading. This can lead to a situation where, if trades remain disabled, token holders won't be able to buy, sell, or trade their tokens, causing a severe impact on the token's usability and market liquidity.

```
function enableTrading() external onlyOwner {
   tradingEnabled = true;
   antiBotBlockEnd = block.number + antiBotBlockAmount;
}
```

#### **Suggestion:**

To mitigate this risk, it is recommended that trading be enabled before the token presale. This can be achieved by invoking the "enableTrading" function or by transferring ownership of the contract to a third-party that has established trust with the community, such as a Certified SAFU developer. This reduces the concentration of power and the potential for malicious actions, thereby promoting a more decentralized and fair environment for all participants.



#### **ABOUT EXPELEE**

Expelee is a product-based aspirational Web3 start-up.
Coping up with numerous solutions for blockchain security and constructing a Web3 ecosystem from deal making platform to developer hosting open platform, while also developing our own commercial and sustainable blockchain.

#### www.expelee.com

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