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Building the Futuristic Blockchain Ecosystem

SECURITY AUDIT REPORT

XTM

TOKEN OVERVIEW

Risk Findings

Severity	Found
High	5
Medium	1
Low	0
Informational	0

Centralization Risks

Owner Privileges	Description
Can Owner Set Taxes >25% ?	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 ?	Detected
Can Owner set Max Wallet amount ?	Not Detected
Can Owner Set Max TX amount ?	Not Detected

HIGH RISK FINDING

Trades are disabled by default

Category: Centralization
Status: Open
Impact: 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 startTrading() external onlyOwner {
 tradingAllowed = true;
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Suggestion:
To mitigate this risk, it is recommended that trading be enabled before the token presale. This can be achieved by invoking the "startTrading" 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.

Alleviation:
unchanged

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 require(
  totalFee <= denominator.div(1) &&
   sellFee <= denominator.div(1) &&
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  "totalFee and sellFee cannot be more than 20%"
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```

HIGH RISK FINDING

Suggestion:
Ensure that fees are within a reasonable range. Ussualy 0-10% is suggested as an optimal upper bound for fees.

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We need those functions as a countermeasure against bots and the contact is planned to be renounced after launch

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Blacklisting

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Overview:
The contract owner is able to blacklist an arbitrary address. Blacklisted addresses have to pay 90% fee.

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 address[] calldata addresses,
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setting swap threshold to zero

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 uint256 _swapAmount,
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Set a lower bound for swapAmount, swapThreshol

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Alleviation:
–

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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	**2 August 2023**

CONTRACT DETAILS

Token Name: XTIME

Symbol: XTM

Network: Ethereum mainnet

Language: Solidity

Contract Address:
0x159B438b5e2aaD937CbE6A7C7324D2E8f9462B8a

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

Owner's Wallet:
0x8D03cb2DE860Adf5F0dA8C3292b451AF9AF472c6

Deployer's Wallet:
0x8D03cb2DE860Adf5F0dA8C3292b451AF9AF472c6

Testnet.
https://testnet.bscscan.com/token/0xf532cd3fbe6Bc9Eab990d78c0f9abd25B29be88c

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.

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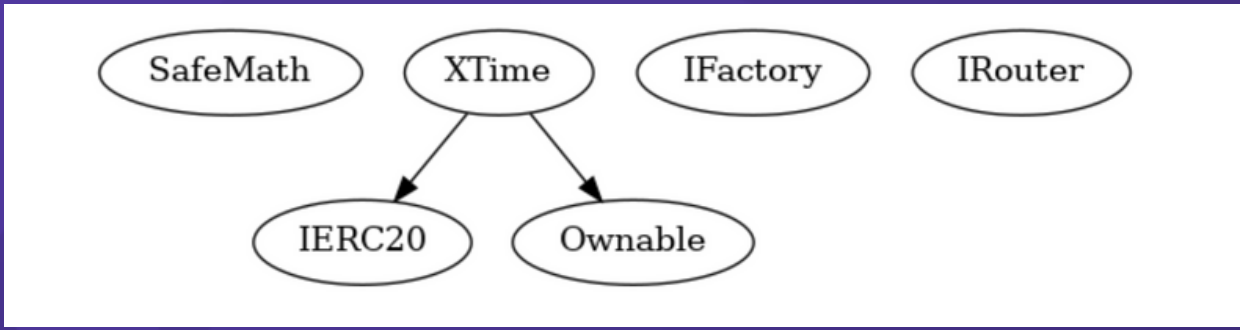
INHERITANCE TREES



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FUNCTION DETAILS

Contract	Type	Bases		
└	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
SafeMath	Library			
└	tryAdd	Internal 🔒		
└	trySub	Internal 🔒		
└	tryMul	Internal 🔒		
└	tryDiv	Internal 🔒		
└	tryMod	Internal 🔒		
└	add	Internal 🔒		
└	sub	Internal 🔒		
└	mul	Internal 🔒		
└	div	Internal 🔒		
└	mod	Internal 🔒		
└	sub	Internal 🔒		
└	div	Internal 🔒		
└	mod	Internal 🔒		
IERC20	Interface			
└	decimals	External ❗		NO ❗
└	symbol	External ❗		NO ❗
└	name	External ❗		NO ❗
└	getOwner	External ❗		NO ❗
└	totalSupply	External ❗		NO ❗
└	balanceOf	External ❗		NO ❗
└	transfer	External ❗	🛑	NO ❗
└	allowance	External ❗		NO ❗

FUNCTION DETAILS

└	approve	External ❗	🛑	NO ❗
└	transferFrom	External ❗	🛑	NO ❗
Ownable	Implementation				
└	<Constructor>	Public ❗	🛑	NO ❗
└	isOwner	Public ❗		NO ❗
└	transferOwnership	Public ❗	🛑	onlyOwner
IFactory	Interface				
└	createPair	External ❗	🛑	NO ❗
└	getPair	External ❗		NO ❗
IRouter	Interface				
└	factory	External ❗		NO ❗
└	WETH	External ❗		NO ❗
└	addLiquidityETH	External ❗	💵	NO ❗
└	swapExactTokensForETHSupportingFeeOnTransferTokens	External ❗	🛑	NO ❗
XTime	Implementation	IERC20, Ownable			
└	<Constructor>	Public ❗	🛑	Ownable
└	<Receive Ether>	External ❗	💵	NO ❗
└	name	Public ❗		NO ❗
└	symbol	Public ❗		NO ❗
└	decimals	Public ❗		NO ❗
└	startTrading	External ❗	🛑	onlyOwner
└	getOwner	External ❗		NO ❗
└	balanceOf	Public ❗		NO ❗
└	transfer	Public ❗	🛑	NO ❗
└	allowance	Public ❗		NO ❗
└	setisExempt	External ❗	🛑	onlyOwner
└	approve	Public ❗	🛑	NO ❗
└	totalSupply	Public ❗		NO ❗
└	shouldContractSwap	Internal 🔒		
└	setContractSwapSettings	External ❗	🛑	onlyOwner
└	setTransactionRequirements	External ❗	🛑	onlyOwner
└	setTransactionLimits	External ❗	🛑	onlyOwner
└	setInternalAddresses	External ❗	🛑	onlyOwner

FUNCTION DETAILS

└	setisBot	External ❗	🛑	onlyOwner
└	manualSwap	External ❗	🛑	onlyOwner
└	rescueERC20	External ❗	🛑	onlyOwner
└	swapAndLiquify	Private 🔐	🛑	lockTheSwap
└	addLiquidity	Private 🔐	🛑	
└	swapTokensForETH	Private 🔐	🛑	
└	shouldTakeFee	Internal 🔒		
└	getTotalFee	Internal 🔒		
└	takeFee	Internal 🔒	🛑	
└	_transfer	Private 🔐	🛑	
└	transferFrom	Public ❗	🛑	NO ❗
└	_approve	Private 🔐	🛑	

Legend

Symbol	Meaning
🛑	Function can modify state
💵	Function is payable

TESTNET VERSION

Adding Liquidity ✅
Tx:
https://testnet.bscscan.com/tx/0xaffdded465af4c86e10fa05bc40f55dcd114e3063a6c1d0e3750f18ac4dc3eeb

==========

Buying when excluded from fees ✅
Tx (0% tax):
https://testnet.bscscan.com/tx/0x594335e3a76d0d11fd89534a0b1ef48e7eebfb046434aa23da078e97c9aad9fc

==========

Selling when excluded from fees ✅
Tx (0% tax):
https://testnet.bscscan.com/tx/0x5ad9afa632911fb6acfdd7f321eeca229aef95e7ef87f745f8aa6d54314987e1

==========

Transferring when excluded from fees ✅
Tx (0% tax:
https://testnet.bscscan.com/tx/0x803458bbc7092f3c98050d44a62d3377341c20556e273adc00d6c6c8c59cf719

==========

Buying ✅
Tx (0-100% tax):
https://testnet.bscscan.com/tx/0x5379917ef50e8fd73b638c6452ce16684ce82fa26f0900644552bb1349f9cf28

TESTNET VERSION

Selling ✅
Tx (0-100% tax):
https://testnet.bscscan.com/tx/0x33953163cc10bfb4fa97b818449381bd09485afe57056a6c65e81dd0151d9126

==========

Transferring ✅
Tx(0% tax):
https://testnet.bscscan.com/tx/0xdab7d12fe82a29dba23c63bceccd43c0a954d667a5f130b9bc4672da62510a06

==========

Internal swap (BNB to marketing wallet | reward token to dividend tracker | reward distribution) ✅
Tx:
https://testnet.bscscan.com/tx/0x33953163cc10bfb4fa97b818449381bd09485afe57056a6c65e81dd0151d9126

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			

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Alleviation:
–

HIGH RISK FINDING

Burning tokens from the contract

Category: Logical
Status: Open
Impact: High

Overview:
Contract tries to burn tokens from its own balance if total fee on buy/sell/transfer is more than burnFee.

```
if (burnFee > uint256(0) && getTotalFee(sender, recipient) > burnFee) {
 _transfer(
  address(this),
  address(DEAD),
  amount.div(denominator).mul(burnFee)
 );
}
```

There are two issues in this section of the code:
1- _trnasfer is used for trasnferring tokens to DEAD wallet. This can cause recursive calls to takeFee function which might revert the whole transaction.
2- contract is using a poriton of “amount’ as the burning amount eventhough there might not be enough tokens in the contract.

Suggestion:
- use a portion of contract balance for burning tokens:
uint256 toBurn = balanceOf(address(this)) * burnFee / denominator;

- switch balances instead of using _transfer:
balances[address(this)] -= toBurn;
balances[DEAD] -= toBurn;
totalSupply -= toBurn;

Alleviation:
At the moment the contract is set to not burn and it won't bet set to burn, it's not in our plans (however, being the tokens burnt from the contract which is feeexempt, there should be no recursive call to takefee)

MEDIUM RISK FINDING

EOA receiving LP tokens

Category: Logical
Status: Open
Impact: Medium

Overview:
an EOA is receiving LP tokens which are generated from auto-liquidity, this causes more centralization power over liquidity pool overtime.

```
function addLiquidity(uint256 tokenAmount, uint256 ETHAmount) private {
 _approve(address(this), address(router), tokenAmount);
 router.addLiquidityETH{ value: ETHAmount }(
  address(this),
  tokenAmount,
  0,
  0,
  liquidity_receiver,
  block.timestamp
 );
}
```

Suggestion:
its suggested to burn or lock new LP tokens.

Alleviation:
We will address this issue by setting the liquidityFee to zero and won't be changed again.

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.

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Building the Futuristic Blockchain Ecosystem

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