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Building the Futuristic Blockchain Ecosystem

SECURITY AUDIT REPORT

ALBETROS

TOKEN OVERVIEW

Risk Findings

Severity	Found
High	2
Medium	0
Low	1
Informational	2

Centralization Risks

Owner Privileges	Description
Can Owner Set Taxes >25% ?	Not Detected
Owner needs to enable trading ?	Not Detected
Can Owner Disable Trades ?	Not Detected
Can Owner Mint ?	Detected
Can Owner Blacklist ?	Not Detected
Can Owner Burn Tokens ?	Detected
Can Owner Set Max TX amount ?	Not Detected

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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	**High Risk Major Flag**
Audit Date	**29 March 2024**

CONTRACT DETAILS

Token Address: 0xB087CB524daEF1CdAC5E78b7b9F2Ed20B891C187

Name: ALBETROS

Symbol: ARS

Decimals: 18

Network: BscScan

Token Type: BEP-20

Owner: 0xC978f05787a944DDb0602AF825057B7Ee081a38e

Deployer: 0xC978f05787a944DDb0602AF825057B7Ee081a38e

Token Supply: 30000000

Checksum: Ae1c3a4fbb6e83e8393a57617b5a5132

Testnet:
https://testnet.bscscan.com/address/0x0970d6fbaee1ffadc1d7ec7ae92ec187b6264a2a#code

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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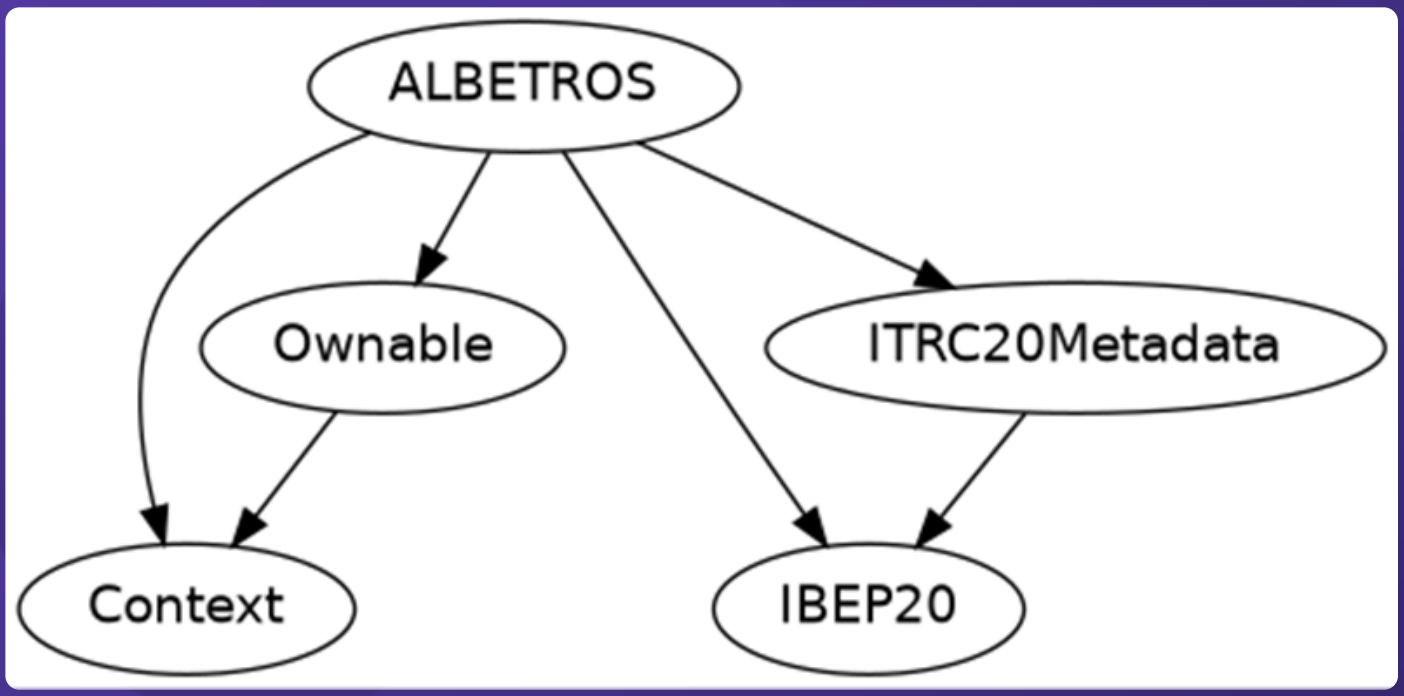
INHERITANCE TREE



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STATIC ANALYSIS

```
INFO:Detectors:
ALBETROS.allowance(address,address).owner (ALBETROS.sol#133) shadows:
        - Ownable.owner() (ALBETROS.sol#51-53) (function)
ALBETROS._approve(address,address,uint256).owner (ALBETROS.sol#281) shadows:
        - Ownable.owner() (ALBETROS.sol#51-53) (function)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#local-variable-shadowing
INFO:Detectors:
Context._msgData() (ALBETROS.sol#13-15) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code
INFO:Detectors:
Pragma version^0.8.17 (ALBETROS.sol#6) allows old versions
solc-0.8.24 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity
INFO:Detectors:
ALBETROS.constructor() (ALBETROS.sol#92-97) uses literals with too many digits:
        - _mint(msg.sender,100000000000 * 10 ** 18) (ALBETROS.sol#96)
ALBETROS.slitherConstructorConstantVariables() (ALBETROS.sol#76-313) uses literals with too many digits:
        - MAX_SUPPLY = 100000000000 * 10 ** 18 (ALBETROS.sol#87)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits
INFO:Detectors:
ALBETROS._decimals (ALBETROS.sol#85) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
INFO:Slither:ALBETROS.sol analyzed (5 contracts with 93 detectors), 8 result(s) found
```

TESTNET VERSION

1- Approve (passed):
https://testnet.bscscan.com/tx/0xdc9da3afbd572a6fc9498a977affe29b894bde54a3a54d2001984f1ca4d7f7bb

2- Increase Allowance (passed):
https://testnet.bscscan.com/tx/0x7696de5c6921593498a465df225dd9653f7ab91fac05d6663c82a57d6e1cf99e

3- Decrease Allowance (passed):
https://testnet.bscscan.com/tx/0x19f8a2cef33f2c41c8bfab38d2d166797fab1ef52e1c7731db5e6b165124ed5f

4- Mint (passed):
https://testnet.bscscan.com/tx/0xfb2efac9ec9509506414bb64b92d9a303c336bde9279d331afa706094b2bde9b

5- Burn (passed):
https://testnet.bscscan.com/tx/0x86c2589a2974c760d0b6239bbcdce828585e1185a6a6978bf9ff86b58af69a56

6- Transfer Ownership (passed):
https://testnet.bscscan.com/tx/0xdb36aaca02e324474cb0b1fdc9433038fc61ae164d66ab2c634881940320451f

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

Centralization – Owner can Burn Tokens.
Severity: High
Function: burn
Status: Open

Overview:
The owner can burn tokens without approval from any wallet.

```
function burn(address account, uint256 value) public
onlyOwner {
    _burn(account, value);
  }
```

Suggestion:
There should not be any burning without any allowance from the user.

HİGH RISK FINDING

Centralization – Owner Can Mint Tokens.
Severity: High
Status: Open
Function: mint

Overview:
The owner is able to mint unlimited tokens which is not recommended as this functionality can cause the token to lose it's value and the owner can also use it to manipulate the price of the token.

```
function mint(address account, uint256 value) public onlyOwner {
    _mint(account, value);
  }
```

Suggestion:
It is recommended that the total supply of the token should not be changed after initial deployment.

LOW RISK FINDING

Centralization – Local Variable Shadowing

Severity: Low

Status: Open

Function: _approve and allowance

Overview:

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

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

Suggestion:

Rename the local variable that shadows another component.

INFORMATIONAL & OPTIMIZATIONS

Optimization

Severity: Informational

Subject: Floating Pragma.

Status: Open

Overview:

It is considered best practice to pick one compiler version and stick with it. With a floating pragma, contracts may accidentally be deployed using an outdated.

```
pragma solidity ^0.8.0;
```

Suggestion:

Adding the latest constant version of solidity is recommended, as this prevents the unintentional deployment of a contract with an outdated compiler that contains unresolved bugs.

INFORMATIONAL & OPTIMIZATIONS

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.

```
function _msgData() internal pure returns (bytes calldata) {
    return msg.data;
  }
```

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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